VOLUME XXXV NUMBER 8

Teachers College
RECORD

May 1934

IF THERE WERE MILLIONS

By THOMAS H. BRIGGS
Professor of Education, Teachers College

For three years now we have been in this dreary wilderness. Every day and every hour we have bent our energies to one thing only, namely, to sustain life, even in the most meager manner. By such genius as is amongst us we have succeeded, but each year on a lower and ever lower level. No man's eyes look upward. Our food, our clothes, and our conveniences are below what any man thought we could do withal. Lord, how much farther toward the beasts of the forests can we go and still be men? Worst of all, I note with grief that certain of my fellows become increasingly content with their lot. So long as they have food in their bellies and they have skins, however filthy, to keep them from frost, they concern themselves not with the future.

With these thoughts I lay awhile in the sun this day and planned what I should do in an Elysium of plenty. The dream filled no pot, but it stirred me mightily to a determination that I and my fellows should have a vision toward which we might hereinafter strive if ever our lot become more fortunate than now it is. And as good fortune seldom cometh of itself, mayhap by our exertions we can achieve somewhat toward it.

—THE DIARY OF A SHIPWRECKED MARINER.

IT HAS been reported that during the worst years of the recent depression many far-sighted industrial companies set their experts at the task of planning for more effective production of better goods when the business upturn began. After making every economy possible to meet as best as they could the bad conditions in which they found themselves, they had the wisdom to develop a program which their directors would approve to meet the challenge of competition when there was again a demand for their products. Educators may find in this incident a strong suggestion for procedure. Shocked by

the limitations that have been put on their work, they are nevertheless fighting bravely to carry on the cause to which they are devoted; but at the same time they know that there are greater possibilities than are being achieved, than have ever been achieved, indeed, and that this is a good time to plan for them.

There is abundant stimulus to prepare a new program for secondary education, for in recent years criticism of its procedures and of its product has been increasing and cumulative. It is in the constant focus of public attention. Every second family now has a son or a daughter either enrolled in a public high school or preparing for assured attendance. Being local, these schools continuously remind the public of their existence, and the reminder is especially acute when the size of the tax bill is contemplated. Though in a way the public has been proud of its secondary schools, it has never understood them, and it is now increasingly raising questions that are embarrassing.

The traditional curriculum, though generally and uncritically accepted along with college academic studies as being somehow mysteriously "educative," is more and more challenged, especially by those who having experienced it can find in themselves no benefits commensurate with the cost of money and time. And the newer subjects—like music, art, home economics, and unusual trade training—are frequently the object of criticism by those who look upon them as "fads and frills." The extracurricular activities, which have developed during the past half generation with amazing rapidity, being greatly different from what the populace is accustomed to think of as education, cause questioning more than criticism. They are frequently in evidence, occupying a large place in the public press and in the conversation of both youth and parents. However justifiable, they have not been justified to the public as education, and in consequence they are another cause for the criticism that public schools are receiving. And, finally, not to attempt a complete list of the causes of popular criticisms, every serious transgression by rebellious youth of conventional rules of behavior is commonly attributed to some weakness of school organization or administration.

Popular criticisms have been supplemented by others from professional educators, who, while sympathetic, are better informed and more seriously thoughtful. They assert that secondary educa-

tion is not now and never in our country has been soundly based on a comprehensive and sensible plan, that general objectives are seldom clearly and convincingly stated, that they are infrequently sought by courses of study or by teaching, and that, in consequence, the results are absurdly small in comparison with what might reasonably be expected. These informed critics have pointed out that, though improved in details of teaching, much of the curriculum continues chiefly because it was once, under other conditions in other times and countries, considered useful for the small number of youth who sought education. They have repeatedly called attention to the changed and still changing conditions in our civilization that necessitate a new type of education which prepares for its needs and demands. As a result of careful studies they have shown that the vast number of youth now in our secondary schools and the almost equal number still to be cared for, at large with little or no remunerative work to do, have an astounding range of individual abilities of all kinds, and that, in consequence, what is good for those at one extreme is of little value or of none for those at the other. They have revealed with devastating tables of facts that achievements in what is taught are too meager to justify continuance of vain efforts, and that a pitiably small amount of what is learned is retained for use or is considered even by the majority of the successful students sufficiently worth while to be used as the basis for further voluntary study, in school or out.

Like the list of popular criticisms, this one gathered from the writings of professional educators is not complete. Both are sufficient, however, to indicate that secondary education in our country is under vigorous fire from several directions. Strangely enough secondary school principals and teachers admit that many, if not most, of the criticisms are just. They very properly point to improvements in their organization and administration, particularly to the physical and mechanical phases, in courses of study, in methods of instruction, and in the extra-classroom attention to individual needs of a personal and social nature. But, after such defense, they admit that secondary schools to-day by and large are far from meeting the needs of society. Their defense against the cry that they "ought to do something" is that they individually are powerless, as, indeed, to a large extent they are. The great majority of administrators and teachers are just ordinary men and women more or less skilled by

training and by experience to perform the immediate tasks that they are expected to do every day. Even if they had the vision and the desire to make radical changes, they are fully occupied by the heavy schedules assigned them. Also, they are expected by a traditionally minded public to do the very things that they actually do, and college requirements, which have changed slowly, are seized upon to justify much of their work. In the great majority of instances, however, this is an excuse rather than a reason. The plain fact is that they do not know and have no easy means of finding out what they should do.

Explain the criticisms how we may, the fact is obvious to the informed that secondary education needs a radical and comprehensive reform. It needs to have its objectives and its special functions clearly defined to insure that it may contribute as it should and could to the welfare of the society that gives it support. It needs to be planned comprehensively with constant attention to fundamental principles and to remote as well as to immediate values. It needs a new corpus of educative materials, which teachers will be trained to understand, respect, and impart skillfully. Training teachers before there is agreement on what is to be taught is like training an artist before it is decided in what medium he is to create. Something can be done, but ineffectively and uneconomically. The creation and the organization of such teaching materials as are demanded in modern society are beyond the competence of any individual teacher or group of teachers, especially of those who are fully occupied with the demands of their regular work.

During the past fifteen years there have been many ambitious attempts at curriculum reorganization, usually by cities and less often by states. Although many of these efforts have contributed materially to the improvement of secondary education, they have for several reasons accomplished far less than is needed. In the first place, each and every effort has been handicapped by an inadequate staff and by inadequate time. Though the teachers selected for the work were doubtless the best available, they seldom had the background of knowledge of education both in the United States and in other lands, of the psychology of heterogeneous youth, of the complex changing civilization, and of the needs, both cultural and utilitarian, that exist in modern society.

The making of adequate new curricula and courses of study is a tremendous job. It can not be done adequately by any but the best minds of our nation, and they will need far more time than has ordinarily been realized. As a matter of fact, the task is unending. As soon as any unit is perfected for one set of conditions, those conditions will have to some extent changed, and consequently new units must be made or old ones modified. The curriculum revision committees have also been handicapped by a lack of time. For the most part they have been expected to perform the complex and unending additional task assigned them in the interstices of their other duties. High credit must in justice be given for their use of time which was properly their own, during the regular school year and during vacations. But there should be no surprise that results of their labors are for the most part only improvements in conventional and traditional courses of study—better than the old, without doubt, but woefully inadequate for the program that modern society demands.

Another weakness in the attempts at curriculum revision has been the economic waste of repetitious work. Every group of committees in every city or state has laboriously read the same theoretical materials and then, bewildered by the immensity of the challenge, has attempted with varying degrees of success the same tasks, often in realized helplessness falling back on the old scissors and paste with the unjustifiable assumption that other teachers elsewhere have presented in their printed materials solutions of the common problems. Of course it must be recognized that by their own readings and attempts at revision the teachers participating in the curriculum work have profited greatly and that as a result they are more professionally minded and more conscious of the need of a real curriculum reconstruction. This by-product is highly valuable, but it probably could have been secured much more economically by other means. It has made the participating teachers receptive, but it has not produced the necessary fundamental curriculum reconstruction. Who can doubt that the time, money, and labor expended by the hundreds and perhaps thousands of local communities if provided for a single group of the most competent possible workers would have resulted in a vastly better curriculum?

Such criticism as has been cited is a wholesome sign of recogni-

tion that the chief instrument which society has to preserve itself and to promote its own interests is inadequately performing its function. If there were no criticism, there would be stagnation, a complacent satisfaction with what we have and little probability of something better. But criticism alone is not sufficient. As Dr. Tidwell has acutely remarked, it was not the cackling of geese that saved Rome. They merely disturbed the slumber of the populace, who called out the warriors to do the job. Thus far the criticism of secondary education, though persistent and in spots loud, has been chiefly an irritation. It has not yet awakened the mass of the people. Those who have from time to time been roused from their slumber, have not known what to do.

In an attempt to indicate one program for procedure, the following steps are proposed. They are not the only ones possible; they may not be the best. But, the result of deep concern and of long study of the problem, they may serve as the beginning of a program that may be modified by the composite inventiveness and constructive criticism of wiser men. In preparing the plan I have assumed no limitations of any kind. Much of it, however, could be approximated without the complete abundance of resources that it was pleasant to imagine as available. In proposing such a program as this it is recognized that one is likely to arouse the hostile criticism of readers more than to challenge their active sympathy. It is easy to object to one item or another and to cite obstacles. Such reaction is to be expected; but also it is to be expected that every constructive critic will immediately propose a better item than the one to which he objects and that he will exert himself to find means of overcoming obstacles or of so modifying the proposal that they can be avoided. Unless we start with a program that is as ideal as possible and then modify it as necessity demands, our imagination will be so stifled by compromise that we shall never know really what we want, never have a goal that will direct our exertions onward.

1. *Defining the Good Life*

It is perfectly obvious that any sensible program of education must be based on some conception of "the good life." What that is we have discussed from the beginning of time. The fact that we have formulated no definite statement of all its details does not

mean, however, that there is not a pretty general agreement in any society as to what on the whole they are. Beyond the large core of tacit agreement there are thinning fringes, areas in which unanimity becomes majorities and majorities fade out to individual idiosyncratic and isolated conviction or assumption. It would not be an impossible task to list with a fair degree of completeness the more important details of the good life that everyone, or nearly everyone, approves, or would approve when they come to his attention. A program of education that would lead youth to adopt the ideals implicit in this core and that would indicate the consequent attitudes and actions, with directed practice to make them habitual, would meet with general approbation. This is the essential and the safe beginning of true education. But because they are not set forth definitely as the popular ideal, the effort of the schools to develop them has been sporadic and incidental instead of systematic, fortuitous rather than with designed intent. It finds a safer course in teaching facts, not at all or remotely related to or contributory to the good life, leaving to remote chance that the individual having acquired the fact or abstract principle will find or make an application. Thus education has become remote and contingent rather than immediate and assured, as it should be.

People are probably in far closer agreement as to what the good life is than they are as to the ideals of the democratic society in which they live and to which they profess a vague and general devotion. They have given more thought to the former, certainly to some of its aspects, than they have to the latter. But an education that is supposed to contribute to the perpetuation of a democratic society and to the promotion of its interests cannot with any consistency achieve this end unless the ideals are clearly formulated, generally known, and approved. The beginning of such an interpretation has recently been made by the National Education Association Committee on the Social and Economic Goals of America.

The responsibility of formulating an interpretation of the good life and of the ideals of our democratic society should be entrusted to a group of the ablest men of the country. Thoroughly convinced of the importance of the task, they should be employed to give their full time and undivided efforts to this work. Their tentative report should, after publication, be widely distributed for discussion in pub-

lic forums of all kinds. It would be an attempt to interpret the mind of the people, the best that they can approve whether they have previously formulated the ideals with definiteness to themselves or not. After such discussion it may be necessary to revise the statement, at least to indicate the degree of popular approval that each item seems to have; and from time to time later, as civilization with its accompanying mores changes, the committee should be reassembled to make such amendments as public opinion dictates.

It is altogether reasonable to assume that the publication of such an interpretation would, or could be made to, result in a popular interest unprecedented except in those periods when some such issue as slavery focused the attention of a majority of the public. Is there anything that democracy needs more than to be made aware of what it is and of what it hopes to be, and consciously devoted to its own ideals? Dissent there would assuredly be from some details of the declared principles; but every dissent that emanated from thought and profound feeling would lead to discussion and ultimately to majority agreement that would be based on some degree of intelligent comprehension. There will probably always be a considerable number of citizens who are too ignorant and too self-centered to be concerned with the large principles of social relations and of government; but if the ideals were interpreted, simply presented, and the statement distributed for discussion in schools and in various public forums, that number would be gradually decreased and democracy would be materially strengthened. If the leaders agree, the populace will follow.

Too large a proportion of the population is ignorant of and unconcerned with the ideals of democracy. The result is that democracy itself is in grave danger and that this danger steadily increases as educators have no assurance as to what of importance they may teach with safety to themselves. I have elsewhere argued that education that is important is dangerous. No educator is ever impeached for teaching facts that are abstract and unrelated to better social living; but if he attempts to present, however fairly, a discussion of the relations of capital and labor or of the ideals that should determine the marital state, for example, he may at once be attacked violently by any citizen who holds a different view. One might think that a discussion of lynching with a conclusion that it is a violation of

our fundamental concepts of society would be safe, but only recently the superintendent of one of our largest cities forbade such discussion because of a certain vocal minority, and in a state on the opposite side of the continent public sentiment made such instruction dangerous. What teachers need is a Magna Charta of democracy, a statement which approved by the majority would inform teachers what they are employed to teach and which would be their defense against those who are not in accord with the mass of their fellows. Only with such direction and defense is education likely to contribute directly and assuredly to the promotion of the interests of society.

The proposal of this first step in the reform of public education may seem to some fanciful and unnecessary. But in fact it is fundamental. No safe structure of education can be built without a safe foundation. Education cannot be expected seriously and effectively to assume the task of training youth practically to accept and to follow higher ideals of social and political behavior until it knows what ideals the public approves; and democracy would not be democracy if it permits teachers, its own employed agents, to attempt through the schools reforms of society that the people have not first approved. There may be a better and a shorter way of arriving at a statement of the principles and the ideals of democracy than the one proposed. If so, it should be adopted. But, pending such a one, this proposal should be considered. To carry it out would cost far less than the planning already provided by the Federal Government for banking, industry, and agriculture. It would be a materialistic minded person indeed who would judge it less important.

2. *Planning Comprehensively for Secondary Education*

One significant phenomenon of secondary education is that never in our history has the public planned comprehensively for the training of youth. More than any other people it has had a faith in secondary schools and has supported them with unparalleled generosity, but it has never concerned itself with planning broadly that they should be potent instruments for general welfare. In the beginning the schools were frankly imitative, as to a large extent they still are. The early colonists reproduced so far as they could the English Latin Grammar Schools; and although Benjamin Franklin

about the middle of the eighteenth century laid out an admirable program, based as much on common sense as on European philosophies, which he quoted copiously, he acted as an individual and not as a delegated agent of society. The deviations from traditional practices have seldom if ever emanated from a consideration of the entire problem, especially as it related to national life.

How, then, have advances been made? Public approval and legislation even for isolated details have usually followed undirected, isolated innovation. Some schoolman would have an idea that a novelty of organization, subject matter, or method was good, and he would give it a trial. If it worked well, and especially if he had a gift for publicity, it would be imitated by others and, perhaps, finally incorporated into the general program. Thus the curriculum expanded from the lush experimentation by the Academies; thus in the past generation has come the popularization of music, general science, and extracurricular activities. None of these novelties was nationally planned or apparently considered beforehand by any large number of delegated educators in relation to the whole program. No wonder, then, that common practice lacks comprehensiveness, proportion, and completeness. This method of laissez faire has brought many advances, and it has also brought many unresolved problems. The time has now come for facing the issues and preparing a comprehensive program.

There have always existed in secondary education important issues, conflicts of theory with theory and of theory with practice, that have never been frankly faced and resolved. Even the series of committees appointed by the National Education Association—a voluntary professional body, be it noted, not officially representing the public—beginning with the Committee of Ten in 1892, has failed to recognize that these inherent issues exist; and the literature of secondary education, which has multiplied amazingly in books and magazines since the early years of this century, has almost entirely neglected them. They were first formulated and presented in the Seventh Yearbook of the Department of Superintendence in 1929. That they are important should be obvious to anyone reading the list. No substantial and well-planned program can be made until they each and all are frankly faced and one alternative or the other adopted by the public.

The recognized importance of the issues led to the appointment in 1933 by the National Education Association Department of Secondary School Principals of a Committee on the Orientation of Secondary Education. This Committee, with a subvention from the Carnegie Foundation for the Advancement of Teaching supplemented by an appropriation from the Department itself, has undertaken to consider as fairly as possible the arguments presented on each side of every issue, to find the implications involved, and to recommend which alternative of each one seems wisest under present conditions for secondary education in the United States. Such work may seem remote from immediate needs, but it again is fundamental. It is slow and time-consuming; but when it is completed both educators and the public will be brought face to face with issues that must be decided, and once decided by any school community a program can be built on a sound foundation.

3. *Determining the Special Functions of Secondary Education*

Like the issues, the special functions of secondary education need to be determined. In history we find stated from time to time functions of a very general nature—to preserve knowledge, to serve the church and state, to prepare for the real business of living, to develop citizenship or character, and the like. But these are also functions of the elementary schools and of the colleges. The cardinal objectives[1] as stated by the Commission on the Reorganization of Secondary Education similarly are for the most part generally approved for all schools. As a result of the failure to agree on the special functions of secondary education, about the only distinction that is universally accepted is that a high school is an institution that follows the elementary school and precedes the college. But administratively we have secondary schools, conceived differently from those in Europe but still with indefiniteness, set apart in buildings, with teachers usually qualified under different requirements and paid under a separate schedule, and with curricula and methods that overlap with those of both lower and higher schools. Just what their peculiar obligations are has never been decided. No wonder that there is a vast amount of inarticulation.

Real articulation is possible, of course, only when education is

[1] Bulletin, 1918, No. 35, of the U. S. Bureau of Education.

planned as a whole, with special functions assigned to each unit that seems administratively desirable. There will no doubt be, and there should be, overlappings of some kinds, otherwise there would be no articulation. But it is reasonable to assume that there are special functions which each type of institution should be expected peculiarly to perform. Such special functions for secondary education I have attempted to formulate.[2] These may not be exactly what will be accepted ultimately after the matter has received full consideration; but they at least serve to illustrate what is needed and may be used as a basis for discussion.

Fundamental to the new program, then, is a clear statement of the special functions of secondary education. Although, like the issues, they may seem so remote from immediate needs that teachers clamoring for advice as to what they should do in this or that specific situation will become impatient while agreement is being reached, it is only as we know what the secondary schools should peculiarly seek to do that educators can intelligently prepare teaching units and devise methods of instruction that are appropriate. To propose the special functions there is need of another commission of men and women of the best minds in the profession, those who know education in other countries as well as in our own and who can keep constantly in mind education as a whole while considering what each administrative unit should attempt. This commission, too, should be employed on full time until the job is tentatively completed, and then periodically recalled to revise the statement as criticism or changed conditions may make revision necessary or wise.

4. *Learning from Foreign Schools*

Although our conception of secondary education is considerably different from that in nearly all foreign countries, it is probable that there is something for us to learn from them. At least we should consider the practices that they have developed through long experience. A consideration of the details of the programs in Europe and in modern Asia may make us more confident that because of different conditions and objectives our schools should follow entirely different roads; but it is likely that they do some things better than we and that from them we can gain valuable suggestions for improving

[2] Briggs, Thomas H., *Secondary Education*, pp. 252-88. The Macmillan Company, 1933.

teachers, units of subject matter, or methods of instruction. All of their practice, of course, would have to be considered in light of the differences in national *Kultur* and social ideals. Although we have a considerable literature on comparative education, most of it attempts merely an exposition of what foreign schools are, without indicating what it may be wise to consider for adoption or adaption to our peculiar needs. There have been treatises written for the purpose of convincing us that we should take over some feature of education in one country or another, but most of these arguments have failed to consider the whole program, nebulous though it may be, for our schools. In the latter part of the nineteenth century there was much unplanned influence from Germany on our textbooks and methods, this coming chiefly from authors and professors who were trained abroad. This was partly bad through failure to recognize the essential differences between the two countries. At no time have the practices of all the important countries been inventoried and studied to learn what wisely might be adopted or adapted here under conditions as they exist.

A minor, but at the same time a possibly valuable contribution, then, to the preparation of a new program for secondary education would be a report by scholars of the features in foreign schools that might well be considered for use, as they are or as they might be adapted, in the United States. These scholars should be thoroughly acquainted with our practices and our ideals as well as with those abroad. Each proposed detail should be evaluated in terms of the principles resulting from the first three steps, and should be approved only as they promise to contribute more than the usual practices to attainment of the objectives that we desire. Some of the proposals should be tried out under controlled conditions with carefully measured results.

5. Knowing the Pupil Population

There have been numerous studies, some of them excellent pieces of work, of the population that is or that might be in secondary schools. The results, however, are not all available in such form that administrators and teachers know them sufficiently to influence as they should either practice or planning. Many schools are still run as if youth were all of one pattern, and the consequent tragedies

of classrooms are often buried as deeply and as silently as the mistakes of bodily physicians. Moreover, when one studies secondary education broadly with the intent to propose a constructive program for all youth, he is immediately conscious that there is much necessary information that has not been reliably recorded even in the less popular publications.

It would be highly desirable, therefore, to have a group of psychologists, teachers, and social workers ascertain what facts about youth need to be known in order that a large program can be created, to summarize what has been found, to propose additional studies that need to be made, and to interpret all findings so that they are useful to those entrusted with the responsibility of devising plans for the education of youth and also for those who undertake the construction of teaching units. It seems strange that after all the years we have conducted secondary schools and have studied youth, so much remains to be learned and so much of what we do know has had relatively small influence on planning or practice.

6. *Defining Education*

Another step before the actual construction of teaching units would need to be the adoption and popularization of a working definition of education and of a few principles such as have not been hitherto provided for. The adopted definition should obviously be sound, comprehensive, adaptable, and pragmatic. To be sound it must accord with the philosophy that is approved by democratic society, whether explicit or not, and it must use the facts that have been proved or can be proved in such fields as psychology and sociology. It should be so comprehensive as to include all phases of education, whether they have been provided by the schools or by other agencies, whether or not they have been previously provided by any agency. It must be adaptable to any and all places, to all conditions, to every time. No definition can be satisfactory that conceives of education as merely cultural or merely utilitarian and suited to only a special class of youth in a favored locality at a given time. And, finally, it must be pragmatic—that is, causing teachers actually to do something which makes a difference that results in good. Too many definitions of education have been approved, quoted—and neglected.

What definition will be accepted this proposal does not dictate.

The hundreds that have been formulated should be tested by the announced criteria and a satisfactory one selected or created. Any one that is useful will not be definite, in the sense that the Ten Commandments are definite, stating specifically what education shall and shall not do. Rather, it will direct and guide teachers without restricting them so that they can satisfy needs of any kind as they are perceived. In other words, it will be like the Golden Rule of the New Testament. I have elsewhere repeatedly proposed and attempted to justify such directive statements: "The first duty of education is to teach people to do better the desirable things that they will do anyway. Another duty is to reveal to them higher activities and to make them both desired and maximally possible." These statements in simple language are likely to be unimpressive to the casual reader until he tests them by the proposed criteria, analyzes them to see what action they necessitate, and attempts practically to use them. They will undoubtedly be unsatisfactory to everyone who wishes to avoid responsibility and work and who demands helplessly that he be told precisely what he should do under every condition in every place at every time. They may not be the best statements possible; but at least they will serve to illustrate the kind that is needed to direct an ambitious program of real educational reform.

Illustrative of the sort of principles that should be adopted to guide the reorganization is the thesis that education is an investment by society to preserve itself and to promote its own interests.[3] So long as education is assumed to be a benevolence, it is on an unstable foundation, as we have had abundant evidence during the past few years. So far as I know, the proposed principle has not been seriously attacked. Nor has it had any material influence on practice, actual or proposed. If it is sound, it should consistently and potently have such influence. Tested by its corollary, nothing in the curriculum is justifiable that does not contribute maximally to the welfare of society, a great many topics in the several subjects, required or elective, would be condemned; and, used positively, the thesis would result in the introduction of many units of instruction which the previously proposed interpretation of the ideals of democratic society would reveal as necessary. Other nations have seen the wisdom of

[3] This thesis I have developed at length in *The Great Investment* (Harvard University Press, 1930).

using education to promote monarchy, fascism, and communism. We must be equally wise to use it for the promotion—in very different ways, of course—of democracy.

This proposed principle brings up at once the matter of indoctrination or propaganda in education. Important as this is, we have never frankly faced it and come to a decision on what the schools should do. Opinion ranges from the assumption that education should be utterly impartial in presenting the facts on both sides of every important issue, leaving decision entirely to the individual, to the demand that any teacher should have the right to attempt in his classes the reform of society in any way that he himself thinks ideal. Obviously the latter is wholly unjustifiable. If the investment thesis is sound, the demand is preposterous. And yet every thinking person realizes that society needs betterment and that its amelioration can be hastened and directed most soundly through education of the young. Many individuals, young or adult, are incompetent to draw sound conclusions on some important problems from a consideration of all the pertinent data impartially presented, and yet they do come to conclusions, usually influenced by potent irresponsible or selfish agencies. While holding the ideal, which it may be assumed is generally approved by democracy, that every individual does have the right to form his own judgment from a consideration of all pertinent data impartially presented, we must recognize the restriction mentioned above and also the difficulty, if not the impossibility, of securing such presentation in classrooms. The more able the teacher, frequently the greater the difficulty.

Failure to adopt a definite policy regarding indoctrination has resulted in the neglect by most schools of any consideration whatever of many problems of acute importance. If they are presented to classes, the discussion is likely to be too general and too insipid for youth to have in consequence any positive opinions, any "deep and abiding loyalties." As Counts phrases it, they "possess no convictions for which they would sacrifice over-much . . . , are rather insensitive to the accepted forms of social injustice, are content to play the rôle of interested spectator in the drama of human history, refuse to see reality in its harsher and more disagreeable forms, rarely move outside the circles of the class to which they belong, and in the day of severe trial will follow the lead of the most powerful and re-

spectable [he means "reactionary"] forces in society and at the same time find good reasons for doing so. . . . At bottom they are romantic sentimentalists, but with a sharp eye on the main chance." If democracy needs "deep and abiding loyalties" to its ideals, evidently education is not producing them. And without an approved program of what should be done in the way of indoctrination and without the Magna Charta previously proposed, the unusual teacher who attempts to develop them puts himself in serious jeopardy. No wonder the great majority of teachers most of the time concern themselves with facts and principles that can have little effect on social ideals and practices. That education may become socially potent, a policy with regard to indoctrination needs to be declared, and, after both professional and popular discussion, approved. If there is to be indoctrination, it should strengthen the democratic ideal.

7. *Determining Types of Organization*

Thus far the discussion has proceeded as if secondary education were an isolated and independent phase of the entire system. Although at times it has seemed to be such, it should never be. It is an integral part of what should be a gradual, continuous process with special functions of its own. Therefore in all planning this assumption should be made and a program developed of such character and length as promises to contribute best to the educational objectives and at the same time most facilitates administration. A school is organized that it may be administered; it is administered that it may be instructed. There is no other prime reason for either organization or administration. What the best units of organization are for our conditions we do not for a certainty know.

During the past quarter century we have tried many types of organization, usually, however, without the control and measurement that have resulted in dependable conclusions. As a result chiefly of theoretical discussions it is generally agreed that the old four-year period should be extended to six or eight years, operated as a unit or broken into two or more divisions, and this is the practice in many localities. At present, as is well known, we have actually many types of organization; and although some diversity may be desirable to satisfy local conditions, there should be more unanimity as to what by and large is ideal.

Decision cannot be made, of course, until the conditioning factors are all known and considered and until there is better agreement as to what secondary schools ought to do, until, that is, the steps previously proposed in this article have been taken. If secondary education is to receive all youth, whatever the amount or kind of their intelligence, and hold them until they are of legal age; if it is to provide vocational training as well as preparation for cultural leisure; if it is more and more to assume the responsibility formerly accepted almost exclusively by the home and the church for building moral character; if, in short, it is to be concerned with the entire development of youth, obviously a very different organization may be necessary from that which may be entirely satisfactory for more limited objectives. With any philosophy the small high schools are and will continue to constitute an acute problem. No program can be anything like adequate until it has provided a vast improvement over practices that are now almost universal and that seem to be fairly necessary in more than half the secondary schools of the country.

An important step, then, in the proposed program will be a recommendation, after all the known facts and the approved principles are considered, as to what type or types of organization and of administration promise the best results. When experimentation is needed to prove any of the proposed features, it should not be difficult, especially if funds are available, to find in various parts of the country conditions that would easily make it possible. Conclusions from such research and recommendations based both on it and on accepted principles should go far toward influencing for the better the practice all over the United States. Certainly they would be invaluable in aiding those who will build new schools or reorganize old ones.

8. *Listing Desirable Activities*

The next step, the first one of immediate practicality, would be the listing and evaluating of a large number of activities[4] that seem to be necessary or desirable under the principles previously proposed. Of course such a listing could be made without the proposed theoretical preparation, but with equal obviousness such suggested activities would contribute less than they can or should to the larger social ends of education, the need for which I am endeavoring continuously

[4] The term "activities" is here used in its most comprehensive sense.

to emphasize. Inventories of desirable activities have not infrequently been attempted before, but usually they have been limited in three ways: first, the workers have not been guided and stimulated by a comprehensive set of fundamental principles; second, they have usually been associated from traditional fields of teaching and consequently tend to neglect activities novel to the usual courses of study and to perpetuate those to which they were accustomed; and, third, they have never been given the time necessary to permit them adequately to survey life needs and to find many important but academically unconventional activities. Moreover, although the aggregate of the items thus proposed would probably loom large, each group of workers has independently attacked the problem, uneconomically attempting the same task as others before it, and its contribution has been only, or chiefly, to its own local area. The important novel proposals have not as a rule been made known to the whole country, so that, in consequence, new elements in the curriculum become popular with a slowness that causes the well-recognized lag of the schools behind the progress of civilization.

To avoid the limitations, it is proposed that a series of groups of workers, men and women of wide and varied experience, broad culture, and abundant inventiveness, be employed on full time to devote themselves to this challenge. To minimize the natural overemphasis on the traditional, these workers should be organized not as teachers of English, mathematics, history, and the like, but, rather, as independent seekers after the needs that modern life has. They should have no prejudice against any activity because it is usually taught in the traditional curriculum or because it never has been taught. In Flexner's fine phrase, "Nothing should be unproved"—that is, all activities that are common to modern man or seem desirable for him should be listed and tested by the basic principles and definitions that have previously been set up.

The resultant mass of items, roughly evaluated by the original workers, would doubtless be far larger than any curriculum could incorporate. But what a wealth of material from which course of study makers could draw, always with the assurance that every item has a reasonable justification and promise of contributing to social as well as individual welfare! Activities could be drawn from the composite so as to enrich the conventional subjects, which would at the same

time have to drop many units not found in the list as failing to contribute, directly or indirectly, to the desired objectives. It is probable that several new subjects—that is, organizations of approved activities—would emerge. And it is even conceivable that secondary schools would in some instances have curricula made up of no such "subjects" as are now almost universal, but would organize activities of all sorts around some important central themes that would produce a truly fused curriculum. What the new curricula should be can hardly be discussed intelligently, much less decided, until the raw material has been gathered. This will then furnish a challenge to all the ingenuity that educators have. Whatever the organization outcome, the resulting courses of study will of necessity be better than any existing to-day.

It would be supererogatory to attempt to anticipate the work of such proposed specialists, and I have no intention of so doing. But it may clarify the proposal to give several illustrations of the kinds of activities which seldom appear in the secondary school program yet which seem to be thoroughly justified there by the needs of the individual effective in society. The following items are listed, each with a brief comment, merely, I repeat, as illustrations; the order in which they appear has no significance. And it should go without saying that the list can be almost indefinitely extended.

a) A knowledge of politics, especially local, as they are, with as much actual participation as is possible and wise. Every informed person knows that what is taught in our schools regarding political activities is not only meager but also far different from what actually goes on.

b) A knowledge of charity relief, private as well as public, and of the theory under which it exists. Youth should be taught how an individual or a family in need can find not merely immediate relief but also aid in regaining and in maintaining independence and self-respect. Youth should also be informed so that he can distinguish between sentimental and constructive charity, so that he feels himself personally involved in the whole problem.

c) A knowledge of how to read on levels higher than is taught in the elementary school. The work of teaching reading in the primary grades is as near a miracle as anything we have in education, and very good practice in advancing the primary skills is developed in the years

immediately following; but then instruction is almost universally dropped, despite the fact that the reading required and expected in secondary schools and in life in general is far more complex and difficult than what has been taught. After the elementary school everyone is expected largely to find his own reading matter and to decide what he is to read for. He may wish to read for literally dozens of different purposes: to enjoy a plot or style, to learn of human character or of ideals, to find one fact or a hundred, to get a point of view, to justify a statement, to consider a complete argument, to ascertain what, if anything, exists contributory to a problem, etc. And each purpose of reading demands a different technique that it may be effective and economical. Most reading on an advanced level involves a comprehension of large units, the evaluation of everything in terms of the need, supplementation from experience as well as from other reading, and organization for use. This is enough of the much that might be said on this topic to indicate its importance and its neglect.

d) A knowledge of how to listen to a lecture, a sermon, or a speech and of how to take notes, mental or written. Ability to see and remember the essential outline with its supporting structure, to recall it for evaluation, discussion, and use is highly valuable, though seldom taught. Perhaps if more people possessed this skill, fewer addresses without respectable structure would be tolerated.

e) Ability to conduct discussions, either in small groups or in public forums, so as to educe courteously and exactly pertinent information and to use it as a means of sensible agreement leading to satisfactory action.

f) A knowledge of the basic principles of science illustrated from all the fields in which research has been made. These basic principles, which are of primary importance to all non-specialists, are too often lost in the mass of details and the complex of minor principles. It is they that are essential to "the habit of scientific thought" as well as to appreciation. They are more significant to the untechnical layman than most of the facts and techniques ordinarily taught.

g) A beginning of the pleasurable habit of leisure time reading in the several fields of intellectual activity, such as science, mathematics, foreign languages, economics, art, and music. This habit is developed by far too few people who have gone through the schools, a

failure that results largely from the fact that instruction is centered on what becomes of primary value to specialists only. There is in all such fields a wealth of material to which youth should be introduced in such way that he covets the continuance of acquaintance; and he should be taught the methods of doing such reading with most pleasure and profit.

h) The use of excursions, not as a relief from intellectual activity, but as truly educative experiences, stimulating interests and imparting techniques that will continue to be useful in independent learning. The relatively few excursions that are promoted by our schools usually to a grievous extent fail even to approximate the values easily possible in them.

i) A knowledge of how to travel. It is generally assumed that "travel broadens a man," but everyone is aware that many travel without being materially broadened or profited in any important ways and that few know how to find in travel what is the most pleasurable and at the same time profitable. As the German proverb has it, "The fool wanders far, the wise man travels." Perhaps instruction in this field would contribute to some changes of classification.

9. *Directing and Coördinating Research*

The compilation of lists of desirable activities and an attempt to evaluate them will inevitably bring to light many problems that demand research for their satisfactory solution. During the past twenty-five years a great deal of research and some real experimentation has been done in the field of education. From this have come contributions of important values. But it is safe to say that research affects practice in education less than in any other professional field. For this there are several explanations, one of the most potent of which is that much of our research is done on problems of small potential value. When conclusions of real importance are reached they often have less effect than they warrant because we lack the machinery to interpret them, to indicate their significance, to apply them to practical programs, and to give the latter professional approval and publicity. Left to themselves, the great majority of our teachers cannot make needed interpretation and application.

There will always be a need for the research worker who seeks knowledge for its own sake, knowledge that sometimes proves later

to be of inestimable worth. Any scholar who is impelled by inexorable intellectual curiosity to pursue a problem of his own, however unrelated it may appear, should be encouraged and helped to do so. But there is also need in education, as in industry, for scholars to conduct researches on problems that emerge from the promotion of a broad program, researches the results of which may be coördinated for large assured effectiveness. As has been abundantly illustrated in other fields, a scientist ordinarily loses nothing of his personality and in no way has his originality hampered by working out a problem of assured need and contributing his results to a common good.

The preparation of the proposed program for a new and more effective education will reveal many problems that can be satisfactorily solved only by research. The variety in these problems will necessitate that much of the research be more than fact finding and statistical manipulation. Some of it will inevitably be carefully controlled experimentation, occasionally on a large scale, such as that necessary to determine the advantages of certain types of organization. Some of it will be simple and immediately practical. For examples: If excursions become a part of the educational program, intellectual Baedekers will need to be prepared. If popular readings in science are promoted, there will be needed either anthologies or finding-lists of the best that has been written about the important principles in all the major fields. And, finally, if it be recommended that literature be taught for its ethical, as well as its aesthetic, value, there will be demanded similar anthologies or lists of poems, novels, essays, and dramas that develop the ideals of patriotism, friendship, tolerance, loyalty, and the like. Careful measurement of results will be necessary to determine the success of all plans.

It is proposed that provision be made for the following:

a) Summarization, after careful evaluation of the techniques used, of all researches that have been done that promise contributions to education. The conclusions that are proved should be practically interpreted and their significances indicated.

b) Listing of other researches that seem especially to be needed. These will emerge from the study of previous researches and also from the preparation of the lists of desirable activities.

c) Encouragement of scholars to undertake needed researches. In some instances the mere publication of need will be sufficient; in

others, especially if the project be ambitious or if results are urgently needed, financial aid will be justified.

d) Interpretation and popularization of findings. The profession, the rank and file as well as the administrators, should be quickly and accurately informed as to what has been proved, and they should be given some suggestions as to what modifications of practice are indicated so that they will either attempt such modification themselves or at least be hospitable to them when proposed by others.

e) Incorporation of all pertinent proved results into the new program that is being developed.

10. *Preparing Teaching Units*

While the needed research is being carried on and partly influenced by some of its results, various combinations of the items from the lists of desirable activities will be tentatively arranged into practical teaching units. These units are not to be confused with the so-called Carnegie "unit," a combination of subject matter requiring a certain length of time for presentation and after which the students are given final examinations. Under the proposed plan education rather than credits will be the objective sought. The new units will have no predetermined length; but probably and preferably certain combinations of them will together compose other units of larger but varying size. Many of them will doubtless conveniently fall under conventional subject heads, known as English, social studies, or home economics; but it is conceivable that others will be so novel as either to demand new subject rubrics or else to compose such combinations as will make the new curriculum look strange indeed to those long accustomed to orthodox arrangements. At this point the teaching units pass from the laboratory research workers into the hands of the "development engineers."

11. *Developing Teaching Units under Ideal Conditions*

These teaching units will then need to be tried out under ideal conditions. There are already in existence numerous experimental or demonstration schools that probably could be induced to coöperate for this purpose. The contribution of these schools in the past has been important, but for two significant reasons less than it might have been. In the first place, their experiments have for the most

part been limited by the very nature of their programs. They have dealt with one detail or another without in the aggregate furnishing a comprehensive program to influence secondary education in general. In the second place, their achievements, even when convincingly good, have had too narrow an influence. Students who have observed their work or who have participated in it through training courses have doubtless been convinced of its superiority; but when they have gone into other schools to teach they have been restricted in their spread of the new materials or methods by requirements and expectations from those who had little or no understanding of or sympathy with the innovations. Some influence they have had, no doubt; but as the number of these trained teachers is relatively small, and as the majority of them lacked the strength to continue a struggle against conventional requirements, they have carried out into the field far less than is desirable or possible.

Experimental or demonstration schools have also had some influence through the large number of visitors, both teachers and administrators, who have observed their work and been impressed by it. But they have subsequently adopted less of the improved program than might have been expected. First, they have observed for too short a time completely to grasp the significance of the innovations. Second, they have frequently been discouraged rather than stimulated by the very superiority that should have influenced them toward activity for betterment. Overwhelmed by the ideal conditions that they observed, all too frequently they have said, "If I had such freedom, such excellent teachers, such admirable equipment, such superior pupils, such small classes, etc., I could do these things too." But not possessing the same conditions, they have not even attempted to approximate the program which they recognize as superior. And, third, these visitors almost without exception returned to full-time jobs the demands of which so absorbed their energy and strength that they had little opportunity to invent or to adapt new procedures; or after such effort as they could afford, they found it easy to relapse into the old routine against which neither administrators nor the public protested enough to make reform necessary.

It is proposed that the new teaching units be tried out in selected schools under ideal conditions, with no visitors to observe at this stage. The equipment should be all that is necessary, the pupils

normal and unhampered by distracting conditions at home, the classes small enough to facilitate teaching and learning—everything, in short, should be ideal. The work should be in the hands of a master teacher, assisted by one or two others of ordinary competence. (The importance of these assistants will be shown later.) And there should be a supervisor who is thoroughly acquainted with the preceding steps in the program, one who preferably has participated in its formulation. This staff should be furnished an adequate clerical force, and its program should be so uncrowded that they have ample time to plan, teach, discuss the results, and propose what seem to be desirable modifications. These proposals should be the subject of extended conferences with the planning experts, who will test them by the adopted criteria and then report modified teaching units for further experimentation. This step obviously will require much time and devoted skill.

12. *Developing Teaching Units under Normal Conditions*

After all that seems necessary is done under ideal conditions, the staff should be transferred to a school where conditions are entirely normal: equipment is limited, pupils are unselected, and classes are large. The only abnormal feature would be a teaching schedule light enough to permit unusually careful planning and subsequent modification of the teaching units after discussion with the experts in charge. Here one of the teachers of ordinary competence who has served as assistant in the preliminary work under ideal conditions would be in charge; the expert teacher would serve as an assistant; the clerical staff would continue; and the supervisor, representing the theoretical experts, would be in constant attendance. Undoubtedly many modifications of the ideal program would reveal themselves as necessary; but each proposal would be considered in light of all the adopted principles as well as of all the pertinent facts. Theory will need in some instances to yield to conditions as they are; in others, reasons why conditions must be modified will be revealed.

More than one trial at this stage will be necessary in several development schools before the teaching units are whipped into such shape that they can be released for publication. In fact, so significant should be the results that the developmental work of the two types of experimental schools would need to be continuous. New conditions of

various kinds—changes in civilization and consequent social needs, facts newly discovered by observation and research, modified theories, and the like—will necessitate that the work of the developmental schools be continuous. There is no inherent reason why the staffs, revivified from time to time by new blood, should not be shuttled back and forth from the one type of school to the other. It is in the second type, the more normal school, that visitors would be received.

13. *Preparing Curricula*

When the teaching units are thus developed, groups of them, with abundant options, will need to be organized into curricula—that is, into coherent masses of material that promise a well-rounded education for each of the several types of youth. The absurdity of preparing curricula first of all and then developing teaching units—i.e., courses of study—inevitably perpetuates traditional subject matter, inhibits the introduction of new materials that may be manifestly better, and makes difficult, if not impossible, a justifiable redistribution of time. It also continues the importance of "subjects," which maintain their place and power without having to justify themselves by a comparison of their units of instruction with those possible. It is probable that curricula will no longer be set up as combinations of so many units of this and that subject, but that, instead, they will be stated as a hierarchy of objectives with a proposal of a large number of optional teaching units which by theory and experience promise to contribute potently to achievement of the desired ends. Any school could then select the objectives that it thinks suitable and possible for any pupil or group of pupils and use such of the teaching units as local conditions may demand. With more clearly stated objectives, more abundant materials for achieving them, and teachers better trained and more fully understanding and approving ends that they are to seek, the curricula of the future are not likely to be the formal, static things that they have been in the past.

14. *Measuring Results*

In whatever form curricula are proposed, there will be need of the best possible means of measuring results. The more the freedom that a school or a teacher has, the more need there will be for valid and reliable measurements that will manifest the degree of suc-

cess attained. The technique of measurement has been greatly improved during the past half generation. But unfortunately, since it is easier to estimate with accuracy the acquisition of facts than of educated power, the results have too often been detrimental to progressive education. It is obvious that measurement ought to be made in terms of the approved objectives; therefore, as new objectives are set up, new types of measuring instruments, no less valid and reliable than the old, must be created. These should be furnished along with the new curricula and proposed teaching units so that the success with which they are administered may be known by the educators, who then can justify to the public their programs by objective evidence. A staff of experts should be employed to prepare the needed tests and to instruct teachers to use them and the public to understand them.

15. *Popularizing the Program*

It will not be sufficient to prepare a new educational program. It must also be popularized. The assumption all along is that there should be local decision as to the details of education, but local decision should be based on information of what is desired, of the possible means, and of what has proved effective. At present local autonomy is chiefly acceptance of tradition with little knowledge of objectives and options and less of results. Professional publications, which contain only fragmentary contributions to a comprehensive educational program, reach relatively few educators and none of the public. The news press knows little about education and publishes hardly anything that is of constructive help.

In light of the need, it is proposed, then, that for every section of the country "educational evangelists" be chosen. These men and women should in the beginning be well informed of conditions, social and economic as well as educational, especially in their own communities. With personal characteristics that fit them to undertake the work, they should be thoroughly trained before going into the field. Evangelists ignorant of the gospel that they are to preach can do nothing really and permanently effective. First of all they should be acquainted with all the fundamental principles upon which the program of the new education is erected—not only acquainted with them, but devotedly committed to them as the essential foundations.

They should similarly understand and believe in the curricula and the teaching units that have been developed. Preferably they should have had a share in their preparation; at least they should have participated in the work of the developmental schools.

When satisfactorily trained, they should be sent out over their territory to explain the general program and how it has been developed. They would do this not only with educators in small groups, but also in meetings of the public. For once the public would have not merely criticisms of common practices, but also a proposed constructive and possible program for ameliorating them. When—and only when—the public is thoroughly convinced that the usual practices of secondary education can be replaced by others carefully prepared, entirely feasible, and assuredly contributory to social welfare is it likely to give the support that real education needs and deserves. Each public, or its professional representatives, must believe in the superiority of the proposed program, or it will not be adopted and used.

The evangelists would also attempt to convince educators, both administrators and teachers, of the merits of the proposed program, not merely of its general theory but also of its practical details. All of this work would no doubt be tedious, but every person who is converted to the importance of the need and the probable value of the program would serve also to spread the spirit of acceptance. There can be little doubt that educators in secondary schools would be receptive of such a program. By reiterated criticism of the usual practices and by their own observations they are more or less convinced of the need of radical change, but they do not know what should be done. Anything that seems reasonable the great majority would be willing to try, providing they are released from conventional requirements and furnished a definite outline of what they should attempt. When they think they know what they should do they will not permit unjustifiable requirements by colleges or state departments of education to be continued, or they will ignore them.

Through group and individual conferences the agents of the central commission would also learn of obstacles, whether local or general, that might prove serious, and those they would report for consideration by the planning experts. They would learn of promising novel practices that have been developed and similarly report them for con-

sideration and possible adoption. And they would also locate teachers of especial strength and promise who could be used, with or without special training, to popularize the program. Such field agents should be continued for an indefinite period.

16. *Training Teachers of Unusual Promise*

Teachers of especial promise should be brought to the developmental schools, satisfactory substitutes being furnished, for various periods of preparation to adopt and to popularize the new program. After acquiring a satisfactory understanding of the fundamental principles that have been used, they would be associated with the developmental schools until they thoroughly comprehended at least the teaching units contributory to their probable future work. They might be assigned to some construction of units; certainly they would have wide opportunities for observation and perhaps for some teaching under the direction of a supervisor who would constantly interpret what was being attempted and explain the significance of every novelty. Then, when so trained in understanding and somewhat in practice, they would be returned to their schools not only to improve their own work but also as agents to spread the understanding and the enthusiasm among their colleagues and their public.

17. *Involving Teacher-Training Institutions*

An attempt should be made to involve existing teacher-training institutions in the whole program. A large contribution they can doubtless make, each in accordance with the special competence of individual instructors, and responsibility for success through the training of future teachers will be almost entirely theirs. The exact ways in which they severally will coöperate can easily be worked out. But undoubtedly they should assume a considerable part of the responsibility for developing suitable methods of teaching the new units. There are merits in each of the types of method that have been proposed and that have become popular and faded in a series of fashions, the new being hailed as a panacea for the faults of the old, and some of the virtues of each are more or less incorporated into all that follow. But a thorough study of all methods that have been proposed with a constant reference to the criteria set up for general education, such a study as seems not previously to have been made,

should reveal the details out of which a new composite method should be developed. This should, of course, be tried out on the new units of teaching under controlled conditions and in comparison with other types of method so that gradually there is developed an ideal general type that can be recommended with the confidence based on objective evidence. Whatever method proves best on the whole, however, will still need to be further adapted to suit the idiosyncrasies of individual teachers.

18. *Devising a Record System*

Along with the new materials of instruction, appropriate methods of teaching, and careful measurement of results, there will need to be developed a suitable record system, so that all the significant characteristics of each pupil and the details of his progress will be kept. It may be that we already have such a system or one that easily can be adapted to the needs of the new education. But what is proposed must be examined in light of what is sought and considered entirely in terms of its contribution to the general program. The record system must be adapted to the educational program rather than the educational program to the record system.

19. *Planning for Guidance*

The chief value of such a record system will be its contribution to the guidance program, which is the next need to be mentioned. There is general recognition of the necessity of some kind of guidance that will direct each individual pupil upon the program that promises most to his moral, social, intellectual, and vocational progress. But there is no equally general knowledge of how this guidance shall be given. The proposals range all the way from an assumed omniscience with attendant quackery to cold objective measurements which often fail to take into account essential personal factors. Much work, some of it highly promising, is now being done on this problem. Much more still needs to be done.

20. *Providing for Articulation*

When the units of organization that promise to be best for administration have been determined, the program must provide for assured close articulation. If education is to be made a gradual

unitary process, an individual should move from one unit to another, steadily increasing in specialization, without the necessity of any jarring adjustment by himself at any point. That is far from being the case in present practice. Pupils on leaving the elementary grades too frequently abandon much of what they have been taught and enter upon a new educational world for which they have inadequate preparation and little need. Though not generally recognized, the adjustment loss at this point is considerable and unjustifiable. At the other end of secondary education stand the colleges, which have all too frequently assumed that articulation should be altogether made by the secondary schools with their requirements. It is only fair to assert, however, that high schools have too often used college entrance requirements as an excuse rather than a reason for not making significant changes in their curricula, especially for the non-college type of student. They have now much more freedom than they use. Articulation needs to be made on both sides, and it can sensibly begin only when each type of institution has clearly defined objectives that are harmonious in the general plan. At present the objectives of college education are usually stated in such vague terms that they may mean anything—or next to nothing. Both secondary schools and colleges need help in defining their objectives and in articulating their programs.

21. *Planning for Buildings and Equipment*

After the educational program is fairly determined there will be a need for building and equipment plans. Every recommendation concerning buildings or equipment has proceeded either from consideration of mechanical factors or from an assumption of educational objectives and methods. If the latter change, the specifications regarding the physical plant and its equipment will also of necessity change. It is not sensibly possible to plan a building that will be equally suitable for all purposes. The building experts will be challenged when the new educational program is set up to advise not merely about new construction but also about remodeling and adapting old structures that are too valuable to be abandoned, and experts on equipment may need to invent new types that will be most useful in the effort to attain the new objectives.

. . .

This is not all that needs to be done to promote secondary education so that it may become significantly valuable in contributing to the welfare of society through the development in youth of ideals, knowledge, skills, attitudes, and habits. But it is hoped that what has been proposed will not only indicate the more important steps that need to be taken but will also destroy any idea that the needed reform is merely a matter of minor modifications that can be made in a few days or months by any groups of teachers working in time that can be squeezed from other prescribed duties. The challenge is far greater than that. It would tax the abilities of the most competent giving undivided service for years to come. But the need and the promise of results would abundantly justify the cost of preparing such a program as has been proposed. Lacking it, secondary schools will continue gradually to make minor improvements; they should not be expected to do more. They already contribute greatly to the development of youth. With such direction they could contribute infinitely more to the welfare and improvement of society.

What would such a program cost? I do not know. Like a father undertaking to restore his child to health, the nation can not exactly estimate beforehand what it will need to spend for a recognized essential; but it would count no reasonable part of its income or even of its capital wealth too great if the desired result could be attained, if the education of its youth could assure more intelligent happiness, more competence, more eagerness to contribute to communal good, and better social welfare. Though assuredly large, the cost of achieving such ends would not be excessive or impossible. It is perfectly safe to assume that in the aggregate several times as much money and labor as this project would cost has already been spent by schools or groups of schools working separately, ineffectively, and uneconomically in that each one has ploughed the same ground as the others before being mired in the morass of impossibility. It is also a safe assumption that with the amount of money already spent on nation-wide investigations financed by benevolent Foundations this proposed program could be got well under way. But what the entire cost would be no one can with accuracy estimate. A father spends what he needs to and can to restore his child to health.

Where would the money come from? Again I do not know. I have merely attempted to outline what I think should be done to promote secondary education if the money were available. If the need of such promotion is sufficiently and generally recognized and a program of convincing worth as a beginning is proposed, I have faith that somehow at some time the necessary money will be forthcoming. We need, first, to be thoroughly aware of the need; second, to prepare a plan of procedure; and, third, to convince the public that it, or some modification of it, must be followed to insure essential results. The program here outlined may not be the best possible, but it may serve as the basis for discussion that will lead to something better.

Ideally the money should be furnished by society itself. Inasmuch as the problem is a national one, communication and transportation having made school district boundaries absurd, the bulk of the cost should be borne by the Federal Government. But it does not seem probable that officials elected because of interest and competence in the affairs of what is generally considered to be politics, can be sufficiently informed and interested to make the necessary appropriation of funds any time soon for this purpose. But if educators recognize the seriousness of the need and approve the general plan of procedure, the government or some benefactor may ultimately be sufficiently convinced to support it. Because the money is not in sight is no reason why we should not have a vision of what we should do if we could.

ROUGH GOING AHEAD: SOME SOCIAL FAITHS AND DOUBTS

By DAVID SNEDDEN
Professor of Education, Teachers College

THE editor of THE RECORD has asked for some expressions of my "social faiths."

Ideally, the outlooks and social faiths of a professed sociologist should be as uncorrupted by personal hopes and apprehensions as are the corresponding "faiths" of a geologist or a surgeon. But as yet it is nearly as impossible for any social scientist, as for statesmen, publicists, or educators, to achieve such detachment. Our *beliefs* and *theories* regarding the deeper qualities and the future prospects of human kind are sure to be, at the least, deeply colored, when they are not largely shaped, by those *wishes,* those *fears,* and those *doubts* with which all our contacts with our parents and other fellow mortals have inoculated us. The "personal equations" of astronomers are small and calculable things. Those of even the best of living economists, publicists, and other would-be social scientists are still vast and incalculable.

In these days of lavish bookmaking, any roving reader of tender disposition can readily depict admirable social utopias for to-morrow. His altruistic wishes, dwelling upon the vivid recitals of human misdeeds of which he reads, will provide fruitful motives and endless materials for imaginary new worlds. The social artist in him can easily construct a world containing billions of enterprising human beings without war or poverty, with no disease or ignorance or vice, and uncorrupted by selfishness or laziness. But other minds of slightly different original cast or environmental nurture can just as spiritedly produce the pessimistic or cynical faiths of a Schopenhauer, a Voltaire, a Dreiser, or a Mencken, with all that such faiths imply of a disordered, cruel, purposeless world.

Hence the reader should be cautioned not to take the expressed social faiths of any one contributor very seriously. But perhaps by

comparing the faiths of a few utopians, a few gloom-casters, and an occasional John Burroughs, however saturated each of these may be with wishful thinking, he may clarify and in some degree reconstruct his own social "philosophy of life."

Subject to the cautions just stated, the present writer will endeavor here, to the best of his ability, to base some expressions of his social faiths on foundations of the rapidly growing, but still relatively inadequate, stocks of *social science knowledge and promising hypotheses* now available.

The title of this essay is suggested by what I consider the most admirable of all current popularizations of sociological science, namely, A. G. Keller's *Man's Rough Road.* In that book Professor Keller shows realistically how fast and how far the human species has actually traveled during the latest hundred centuries of its evolution. But he does not disguise the fact that such progress has been over very rough roads indeed. And because I believe that man will long continue his wonderful evolution, but over even rougher roads, relatively speaking, I have taken my title as stated.

The topic "social faiths" should be here conceived of as having several special implications for our own times and conditions. This is the fourth decade of the twentieth century. A few short years ago we had accustomed ourselves to look back upon "a century of great progress." Yet we are now in the midst of a period of a world-wide disturbance. It is a time of much serious questioning of many long-cherished faiths and institutions.

Undoubtedly the most acute and momentous of the implications of our topic can be thus expressed: What do our social faiths hold to be the possibilities and probabilities that the human species will be able to maintain and improve the gigantic, even world-wide, coöperations which have already been precariously achieved in part, but which also seem now to be so tragically threatened in places?

A second implication is this: What do our social faiths now hold to be the powers of civilized peoples in the near future to *conserve* and *improve* their institutions which support these great coöperations? Seemingly we owe the gigantic coöperations which civilized societies have thus far achieved largely to such institutions as strong political states, monotheistic religion, world-wide economic commerce, great corporations, democracy, and constitutions. Can they be conserved and improved, or replaced by better agencies?

To many persons a third implication is of great importance. In the varied and tumultuous evolutions of coming centuries, what are to be the probable relative rôles of those biologically or geographically somewhat separated and competing peoples whom we recognize as Japanese or Germans, Asiatics or Europeans, Jews or Gentiles, Negroes or Whites?

And, finally, since the institutions of purposed educations are, like those of the pure and applied sciences, such relatively modern instrumentalities devised to help hundreds of millions of men to strive forward and upward over their rough roads, what of our faiths in their potentialities?

I. GREAT SOCIETIES

The small-scale coöperations of men—in family, pack, gang, crew, band, clan, and other similar societies—are certainly thousands, if not tens of thousands, of centuries old. Those coöperations must have been highly successful. Why? Because they had enabled our ancestors, long before the evolution of the institutions of civilization, to possess and multiply over large parts of the earth's surface.

But the large-scale coöperations, the great societies of men, are hardly a hundred centuries old as yet. We know that fewer than three hundred generations of men have seen the light since political societies had been formed, voluntarily or by coercion, strong enough to protect soil-tilling millions in the flooded valleys of Egypt, Mesopotamia, and India. Only yesterday, in evolutional senses, did a few environmentally favored peoples develop coöperative teams sufficiently strong and persistent to build the walls of China and Peru, the pyramids and temples of Egypt and Assyria, the navies of Crete and Hissarlik, the literatures of Palestine and India.

But how few of the gigantic coöperating teams found during the latest fifty centuries around the Mediterranean, in the tropical Americas, in India, and in eastern Asia have ever held together for more than ten generations! They were frail and tentative structures, as the events showed. At best they were vast experiments of highly adventurous and opportunistic kinds. And at best they were able to endure only through enslavement and coercion of tortured millions.

It would seem, then, that Oswald Spengler, in his doubting anticipations of the staying powers of great societies and great cultures,

may be largely on sound ground. In evolutional senses, these great societies are still very experimental. None of their achievements during the latest hundred centuries justify us in assuming that in their known forms and with their experimental institutions they *must necessarily* endure very long.

But is that all of the story? It certainly is not. Let us turn to Keller's *Man's Rough Road*. Our species has not only an inveterate "will to live," but it is endlessly venturesome and experimental. Through all the millions of years since his exceptional brain became man's chief means of competitive survival and multiplication against other organic species, humanity has toiled over rough and forbidding lands where even the crudest of paths had still to be made. For once that he has achieved enduring gains he has failed dozens or hundreds of times. And this will be the history still for hundreds of years to come—at least such is one article in my present social faiths.

Here and there on the earth's surface in these coming centuries will be found peoples whose fresh vigor and enterprising outlook will furnish the energy to carry them far ahead for a period. But elsewhere will doubtless be found other peoples whose dynamic powers have for the time been stalemated and for whom a long fallow season is in prospect. In any event, a great deal of rough, even terrible, going is to be expected for centuries to come by all those societies which seek to conserve and extend the large-scale co-operations of men—and that, in spite of great advances in science and education, as it was earlier in spite of Greek culture, Roman laws, and Christian ethics.

And on these rough roads countless thousands will despair and faint. Like many sensitives of recent years, they will querulously whine that "life is not worth living under such conditions." But did their ancestors weaken and give up the struggle?

In many respects man's rough road seems to have been no less rough during the latest five centuries than ages earlier. During that time the dynamic West European peoples—those of Spengler's Faustian culture—have striven hard to subjugate commercially and politically the temporarily less well-equipped peoples over the entire rest of the globe.

Aided by newly invented power-driven mechanisms and natural-science controls, and possibly by certain biological superiorities pro-

duced under the severely selective conditions of rigorous climates and racial amalgamations, these Western Europeans have given our species for the first time various world-wide coöperations and interdependencies, as well as world-wide competitions and conflicts. But in the light of recent events, how precarious, after all, are the newly contrived social structures which their enterprises have built!

Nevertheless, it is my profound sociological faith, if I may so term it, that net balances of progress will long continue to be achieved in spite of the many turnings and the numberless dead ends to be encountered by the various sects of the human race. Steady accumulations of experience will long continue. These will take their most reliable and enduring forms in the natural, mental, and social sciences. These sciences will increasingly be so documented that each on-coming generation can more effectively than its predecessors be set upon the best paths thus far shaped and proven.

It is, of course, obvious that if the "seed" qualities of men, their basic biological inheritances, were to continue in progressive evolutions, then future large-scale coöperative going would be far easier. It is easy to see that the complexities of the collective services which men seek to render to themselves and their kind would be far more easily met if basic human nature could change proportionately. But there is no evidence that such improving evolutions are now taking place or have, indeed, been taking place during the latest hundred centuries. On the contrary, the social scientist detects many evidences in recent times of dysgenic *reversals* of the ancient survival processes and selective fecundities which undoubtedly served through the older ages to give our species the superior heredities which it now carries in the germ plasm.

It seems also tantalizingly true that if the evolving complexities of our institutions could be paralleled by corresponding extensions of the effective life spans of our men and women, as wistfully imagined in Bernard Shaw's *Back to Methuselah*, the roughness of our future going could probably be greatly mitigated.

The natural evolutionary processes did, indeed, ages ago give man a longer period of avidly learning "infancy" than is had by any other species. They gave him also a longer adulthood than that of all but a few other species. But even at that, the three-score-and-ten years now available to the healthiest barely suffice to get a fair equip-

ment of science and wisdom wherewith to launch well-equipped attacks upon present-day problems. Nevertheless, it seems to me that the large-scale coöperations of men will eventually and inevitably embrace all the peoples of the earth in the form of stable, largely harmonious, and mutually-aiding unions, but that, as stated before, it will require some centuries yet of very rough going before that condition will be realized.

But I also believe that the present peoples of North America, from the Rio Grande to the Arctic Ocean, are the most favorably founded and environed in all the world to serve as a world source of the more efficient large-scale coöperations of that distant future.

And I desire to repeat my convictions, that the large-scale coöperations of that future will acquire healthful and durable foundations largely in proportion as they are constructed and operated in the light of those social sciences which have as yet only begun to be developed. The great societal mechanisms of the future will have to be engineered by social scientists no less than are the great power-driven mechanisms of to-day engineered by physical and chemical scientists.

But let us not, like children, expect great results too soon. Nor let us, like our primitive forefathers, expect much progress or security through magic, miracles, or messiahs. Nature itself is the final arbiter of the enduring values of all our achievements. And my faith in Mother Nature is well expressed in the solemn words of our great naturalist and thinker, John Burroughs:

> The biological law of the supremacy of the strong over the weak, of the fit over the less fit, which prevails throughout the world of living things, gives us pause when it is applied to human history and to the relations of man with man. Yet it is true that the price of development is the struggle for life. The road of evolution is an uphill road. When struggle ceases, progress ceases, and evolution becomes devolution. Our strength is the strength of the obstacles we overcome. The living machine, contrary to the non-living, gains power from the friction it begets.
>
> Down the whole course of history we see no other powers at work than those that are about us. Good is in the ascendancy everywhere, or soon will be; evil dies out; the wicked cease from troubling; the amelioration of mankind goes on; and no God or Devil hinders or favors.
>
> Nature is both God and Devil, and natural law is supreme in the world. The moral consciousness of man,—all our dreams of perfection, of immortality, of

the good, the beautiful, the true, all our veneration and our religious aspirations,—this is Nature, too.

Man is a part of the universe; all that we call good in him, and all that we call bad, are a part of the universe. The God he worships is his own shadow cast upon the heavens, and the Devil he fears is his own shadow likewise. The divine is the human, magnified and exalted; the satanic is the human magnified and debased.

We find God in Nature by projecting ourselves there; we find him in the course of history by reading our own ideals into human events; we find him in our daily lives by listening to the whisperings of our own inherited and acquired consciences, and by dwelling upon the fatality that rules our lives. (From John Burroughs' *Accepting the Universe.*)

II. TOWARDS STRONGER STATES

The institutions which men build are in a very real sense the mechanisms, the tools, of the larger coöperations through which "life more abundantly" is to be realized. Hence our faiths in the future of these coöperations will often be reflected by our faiths in the virtues of the institutions themselves.

The most conspicuous and potent of these institutions for recent centuries have been *political states* with their varied machineries of government. Of next importance, historically, have been the *theological* and *hierarchical* systems. And of rapidly rising importance in our times are the thousand mechanisms which, originating *in specializations of economic production and regional concentrations of production*, presently merge into the gigantic agencies of *world-wide commerce*.

All strong peoples of to-day cherish great ideals and plans for the more effective working of these social mechanisms. In some cases these idealized plans and their resulting institutions have been in experimental operation for some decades or, in rare cases, centuries. But most of them are still dynamically formative and are perhaps the more intensely idealized on that account.

And towards the further implementing of such plans, most civilized peoples are now eagerly employing such other increasingly institutionalized agencies as accumulations of science, of educative processes, and even, in some degree, the aesthetic arts, eugenic controls of family life, and administrations of justice. These institutionalized agencies of civilized societies can, indeed, be profitably divided into

two classes according as they yield chiefly *light* or *power*. Our political groupings, from towns to empires, are obviously *power-operating* agencies, as are often the political parties striving to control them.

On the other hand, science, like education, is chiefly light-giving and all the signs seem to indicate that, though it was once far otherwise, the beliefs and congregational coöperations which make up religions are also, for our times, chiefly *light-giving*.

But the large-scale economic coöperations of men, like political organizations, tend in our day to become increasingly dynamic and militant—that is, *force-controlling, power-operating*. This is only somewhat less true of organizations of consumers in coöperative purchasing societies and of manual workers in unions and communistic groups than it is of corporations of capital investors or guilds of credit distributors. Just as hieratic organizations so often tried to bully, if not control, political societies in ancient Egypt and in mediaeval Europe, so in our day not a few powerful economic organizations venture secretly or openly to challenge the authority of political governments. In fact, current conflicts between political and powerful economic societies must probably be reckoned the chief present-day source of the rapidly aggrandizing powers of strictly political societies. It is in these areas that many of the causes of international wars, and of even more portentous "class wars" are to be found.

The great idealized plans for such institutionalized improvements of the large-scale *political* coöperations of men are for our day commonly assembled under such terms as republicanism, democracy, socialism, communism, imperialism, nationalism, internationalism, and the like. And all tentative ventures to give full effect to these gigantic, even if often nebulous plans, presently evoke widespread and devoted partisanships, often so emotionalized that tens of thousands of devotees are willing to strive, fight, and die for their faiths in particular "isms."

All such conflicts operate in effect as far-reaching trial-and-error experimentations towards building effective and enduring social mechanisms for the larger political coöperations. But how blind and how destructive are large proportions of such promotions! The further prolongation and intensification of such conflicts, I believe,

augur the roughest going which our species will have to face during the next few centuries in most of the rich regions of the earth.

All large-scale political governments are perpetually fated to navigate the stormy currents of the rock-bound straits which lie between two headlands no less threatening than the Scylla and Charybdis of the ancients.

One of these headlands is that often called individualism, but which should in sociological reality be called sectarianism, corporationism, or "partyism." Some such term is needed to express the inveterate predispositions of strong men to form sects, unions, sets, classes, castes, and other small-group-centered associations to further their special interests and faiths.

The other of these headlands is that of the necessities of large-group social efficiency—efficiency in providing for the public defense, for the administration of justice, for the operation of public works, for the conservation of the national health, and, indeed, for the provision of all the securities and sources of large-scale collective well-being which the more civilized peoples seem increasingly to expect and demand from their governments.

But intense and devoted "partyism"—the "individualism" of the social philosophizers—and large-scale social efficiency are in large measure chronically antagonistic. Hence the vast and destructive pendulum-like swings which we call revolutions. Hence, likewise, the frequency with which hordes of confused and politically impotent peoples in our troubled days despairingly entrust their fortunes and even their lives to the decisive, even if utterly nearsighted, controls of dictators.

Since 1776 large proportions of Americans have deepened their faiths in certain of the more flexible and less coercive political institutions of large-scale coöperations. They have increasingly cherished republican states, democratic freedoms of many of the private functionings of individuals, specializations and mechanizations of economic production, spiritual autonomies of religions, much of laissez faire in moral behaviors and commerce, and much of freedom of thought and speech generally.

But these faiths have had to endure some severe shocks during the second and third decades of the present century. We seem to be experiencing a tremendous swing of the pendulum towards increased

governmental controls of the mechanisms and functionings of all large-scale coöperations, except the religious. But whether in final effects this great swing will simply carry us back to old and harsh types of regimentations, or upward towards fresh and more healthy types of political coöperations, no one can now intelligently foretell, no matter what his emotional conditionings may be.

Personally, I am extremely skeptical of the abilities of human beings, as at present shaped by their educative environments, effectively to administer over considerable periods for the greatest good of the greatest numbers the great extensions of large-scale political controls now being everywhere attempted. That skepticism grows out of the conviction that it is always far easier and more tempting for the possessors of political power to put brakes on the energies of men than to so organize them as to develop new motive power for good works. It seems to me that the statesman, Ortega y Gasset, is largely right in most of the interpretations of these conditions contained in his *Revolt of the Masses.*

I find myself, indeed, strongly drawn to the *ideals* of socialism, communism, and other forms of so-called economic collectivism. But I cannot beget confidence in the long-term competency of any of the *human agencies* which seem as yet available to administer them. And these skepticisms apply no less to the gigantic centralizations of political controls being developed in Japan, Russia, or the United States than to those of Italy, Turkey, or Germany.

We often find the phrase "man must learn." But sharp distinctions must be made between what *man* learns, and what *men* in their fifty- to seventy-year terms *can* learn, and, of their learnings, *use,* Especially difficult will it be for political rulers, as autocrats or voting citizens, to be able to learn how to use the newer kinds of political power.

In this connection, the words published in a recent volume by one of the sanest of England's present-day thinkers, C. Delisle Burns, seem to be prophetic:

> It is by no means certain that the next century will be better than this. Some of the evils we endure may be abolished: but others may come. I cannot believe that we shall continue to maintain an economic system so absurd that it induces some to try to "make money" by investing in machines whose products no one can buy, because all the money has gone to make more machines. I cannot

believe that we shall continue to prepare for national wars by "defending" ourselves against other people's defence of themselves against us. But clearly we may abolish poverty at the cost of an universal enslavement. We may cease to fight as nations, in order to fight as social classes. That would not be an improvement. (From *The Horizon of Experience.*)

I have no doubt that during the next century or two the *political state*, as nation or empire, is destined to play an even more important rôle in the affairs of mankind than it has played in recent centuries, or during some of the "great eras" of the past.

But what we shall probably see will be the successive ascendancies of a few strong states. The political realist knows that international controls and harmonies even now lie in the keeping of fewer than a dozen strong powers. The present fierce rivalries of these are deeply rooted in man's past achievements and even to some extent in the easily arousable "seed" qualities or quasi-instincts in human nature.

But the seemingly inveterate rivalries of these powers, culminating in rabid wars, are certain to react in various ways, some as yet wholly unpredictable, on the millions of men, women, and children who must *compose* nation or empire, but who, under adverse conditions, may hardly be able at all to *control* the actions of their governments, whether autocratic or parliamentary.

It will, of course, be increasingly obvious to rulers, whether dictators, bodies of oligarchs, or the millions of ablest men and women into whose hands a democracy like ours consigns authority to make final decisions of national policy, that a nation can attain and conserve great strength only as it produces and nurtures to high competency millions of strong citizens. Manifestations of that wisdom are even now so pronounced in such gigantic power-grasping states as the Soviet Union, Japan, Italy, and Germany as to suggest that presently their examples may greatly affect the social controls to be exercised as national political policies by Great Britain, Brazil, China, and the United States.

But can we doubt that such gigantic social mechanisms will, like the great controls of ancient empires, probably be maintained at high stages of social efficiency for their purposes of contributing to one set of human values only at terrible costs to other types of values which it is still in the heart of man greatly to desire?

Some of my apprehensions for the future arise from the undoubted

fact that we can derive so few assurances from history or faith or science that such vast experiments or adventures as those now being zealously promoted by the fecund and dynamic social teams which we call Japan, Germany, Russia, and Italy can for any considerable time conserve and advance the finer values of civilization.

We may believe and hope that American expansions—less imperialistic, more democratic, more tolerant and humane than those of the other powers named—are destined to be richer sources in the long run of that "life more abundantly" called for in our idealistic philosophies. But do all histories, or now the social sciences, give any considerable warrant for such hopes? Do the recent or present operations of our party governments, our economic corporations already under political control, and the gropings of even our social scientists give us any grounds for great expectations?

Here again, my most optimistic article of faith for the future lies in the conviction that the further development of the social sciences under the direction of societies powerful enough to induce or enforce world-wide application of their most promising findings will enable "the masses" to extend intelligent influence in making and controlling their governments to degrees never before realized.

It may be, too, that the social sciences will, sooner than I anticipate, lay foundations for national policies promotive of eugenic fecundity, as dreamed of in Lester Ward's "telic evolution." But today's social scientist can adumbrate that only as a faint hope—at least for a democracy.

III. NON-POLITICAL COÖPERATIONS

Limitation of space forbids any considerable analysis of my faiths and doubts as to the future functionings of our non-political agencies of large-group coöperations.

Of these, our historic religious systems come first to mind. Can any of us diagnose recent changes in the great non-Christian faiths? But many of us have come to appreciate keenly certain profound changes which have overtaken the Christian faiths during the last half century. Whether such changes augur advantage or loss to the millions of the future, I have as yet no clear convictions.

The family is not one of the types of societies upon which attention is focused in this paper. But social scientists, thinking of family

relations as the conserving source of the biological virtues of our species and the nurturing agencies of many of the primal social virtues, believe that not a few of the social virtues for the large-group coöperations of men and women are planted and seed-embedded in parental mating and family rearing.

But I can confess to no serious apprehensions as to the future of family life in America, at least as inferable from present tendencies. Of course we are as a people lavish and wasteful of our family life, just as we are of our natural resources, our opportunities for culture, our justice, our educators, and our enterprisers. High rates of divorce, of desertion, of unfertility, of voluntary race suicide and, in some sections, of irresponsible low-grade fecundity have long been our deplored characteristics.

Nevertheless, it is my conviction that, allowing forty per cent for waste, the *best* sixty per cent of American families are the best the world has ever yet seen. And I see no reason why the improvements realized to date by this sixty per cent—in careful entry upon marriage, in careful control of fecundity, in division of labor between parents, in conservation of physical health and morale of children, in parental ambitions to provide excellent educational and other "starts" in life for their progeny—should not continue. In this area, at least, the social sciences, as rapidly being adapted to collegiate and secondary schools, are now able to present very considerable ranges of reliable guidance and exalted ideals to the family makers of the future.

The readers of Section II will already have inferred that I can see only profound unsettlements and even chaos ahead in all those areas of economic production which have heretofore evolved with little aid from political controls but into which political controls are being forced by panic or self-seeking. However, the grounds of my apprehensions are too complex for analysis here.

I shall also attempt no expression here of beliefs relative to that other area of problems raised at the outset of this paper—namely, that of the future of those great groupings of human beings alleged to rest on racial grounds.

It is evident to all realistic observers of the world-wide human scene that so-called racial cleavages are likely to play highly significant rôles in the large-scale coöperations and conflicts of the next

few centuries. Promoters of nationalistic aspirations—Germanic or Slavic, Asiatic or African, yellow or white—are busily fostering widespread ideals and antipathies on these social foundations.

But perhaps it is just as well that all social scientists tread softly in these domains. In the language of President Jordan, on these matters, "we know too many things which aren't so." Thoughtful social scientists, at least, know too much to preserve their older prejudices here, and as yet too little to dare support new hypotheses.

However, looking to future possibilities of good or evil in or through all the above agencies, there is one relatively new social "force" in the world the consequences of which may not be disregarded. That force, if one may so style it, derives from present-day advancements in means of communication.

These means range from journals and books to radio broadcasting. They serve on literally prodigious scales to diffuse factual knowledge, partisan dogmas, reformist aspirations, and the disillusionments of critics. In ways as yet beyond any social diagnosis, moving pictures are shaping some of the valuations and appreciations which eventually blend into the youthful philosophies of politics and war and sex of our adolescents. No less potent, but of as yet unpredictable effects, are the daily newspapers read by the elders.

To the present critic it often seems that out of most of these new great floods of words and pictures there emerge no significant social trends or integrations of thought or motive or belief. Except for a variety of uninterpreted, and therefore nearly insignificant, factual news items, nearly all the explanations and pleadings and idealizations which come to peoples to-day through their vast networks of communication seem hopelessly superficial and romantic. But that would surely be a premature interpretation of their ultimate potentialities.

IV. PEACE-WAYS AND EUGENICS

All loyal Americans are born reformers. Reforming ideals and movements have always been highly dynamic in our midst. And in recent decades many other peoples have evoked not only whirlwinds but prolonged tempests of reforming propaganda and conflicts.

But perhaps too much of reading and reflection tends to chill the ardors of social scientists towards large proportions of contempo-

rary reforming movements. They find in such movements relatively too much of heat and too little of light. The reformer who would be popular must be either a Cassandra or a hearty teller of good fortunes. "I can summon spirits from the vasty deep," boasts Glendower. "Aye, and so can I or any other man; but will they come when you do call?" asks the realistic Percy.

That human beings, acting in their intelligent large-scale capacities, will eventually devise ways and means of preventing such social plagues as wars, economic depressions, messianic delusions, dysgenic fecundities, and the like, I have no doubt. But I fear that such achievements will not be extensively realized within the lifetimes of persons now living. The social sciences know too little as yet of the deeper sources of those social processes, salutary or evil, the surface symptoms of which are international conflicts, economic stalemates, political corruptions, race suicide, and utopian obsessions. Causes of these disturbances derive from great depths. They lie partly in human nature itself, and they are also inherent in some measure in the very nature of our best institutions. These institutions resemble domesticated elephants or houses or fire or water in that ordinarily they serve us splendidly, but occasionally they display traits of seeming madness. Hence I anticipate prolonged rough going before we shall have mastered the means of preventing those plagues which now harry recent civilizations.

Nevertheless, "the fiend that man harries is love of the best." In the deeper recesses of his soul every sober student of the social sciences cherishes some great faiths and some great doubts relative to societal health and disease. In recent decades these students have, with hardly any exceptions, joined the armies of social philosophizers and revolutionaries everywhere who are especially planning and agitating for extensive reforms of our modern large-scale *economic institutions*.

But thus far the "planned economic systems" with which any or all of these reforming sects and philosophizers propose to replace the allegedly laissez-faire systems which have grown so fast and far in the latest two centuries leave the aspirations and faiths of the present writer completely cold. To him all these "plans" and "isms" are founded on either the sands of fairyland utopianism or the mud of gigantic expropriations by disadvantaged masses. I have no doubt

that the next few centuries will see large proportions of our economic problems solved. But those solutions will *not*, it is believed, follow present much discussed political and other plannings. But that thesis requires an essay to itself.

Hence, in the few remaining paragraphs of this paper it is purposed briefly to discuss the writer's social faiths in two types of reforms which may well produce signal human ameliorations within the next few centuries. The first is gradual large-scale controls of the conditions which make for wars. The second is purposive controls of conditions for the promotion of superior human "stocks" or carriers of heredity.

I am far from believing that we shall soon be able to cure the disease of wars within large societies. Nevertheless, given time, better educations, more diffusion of the best findings of the social sciences and more scientific publicity, I see no reason why we should not continue to make progress towards preventions and cures in that area at least as rapidly as we have done during the latest forty centuries—because, in spite of doubters, such *has been* one kind of progress.

Wars throughout all recorded history have usually derived directly or indirectly from two considerably unlike sources.

The first source has been the desires of strong and waxing peoples to possess the land and other valuables of weak peoples, as we Americans have so extensively and thoroughly demonstrated during the three centuries of our occupation of this continent. Whether such wars have had the approving sanctions of deities or not, the present writer will not undertake to surmise. But it seems highly probable that they *have had* the sanctions of whatever have been the pressures of *human biology* or *human evolution*, else had our species *not* been where it is to-day.

The second great source of wars has been the final determinations of supposedly oppressed peoples to obtain relief and justice by force when other means have seemingly failed. Wars waged by minorities within empires of conquest have, obviously, had these sources. But so too have not a few of what have ended as international wars. It is an interesting reflection that, whereas in our day large proportions of "political liberals" and "radicals" in several countries are fiercely opposed to further wars of conquest, they are favorably disposed, if not militantly eager, for "class wars"—that is, wars of supposedly

oppressed proletarian classes against allegedly oppressive "capitalistic" or property-owning classes.

But it is the writer's conviction that a variety of large-group social tendencies has been so markedly in the direction of postponement and prevention of wars in recent centuries that the outlook for the future is decidedly hopeful when these tendencies shall have had time to run their full course.

Was not the Constitutional Convention of 1787-1789, with the later acceptance of its basic laws by those potential small nations, the original colonies, one of the most momentous events the world has yet seen for international peace? And should we not echo the judgment of Arthur Weigall when he says in the opening paragraphs of his *Life and Times of Marc Antony*:

> The outstanding achievement of modern civilization in any country is the creation of that attitude of mind towards human life which rejects the weapon of war as an instrument of domestic politics. The most truly civilized states are those in which the home government can be carried on, or changes of government effected, without bloodshed; and, emphatically, the mark now of a backward people is the impatient political use of armed force and the firing-squad.
>
> Ancient Rome, at about the date of the birth of Antony, viewed from this angle, was astonishingly uncivilized. . . .

So much for wars and causes of wars. But it is my belief that a far more subtle disease now threatening the future well-being of civilized societies is the dry rot of dysgenic fecundity.

We cannot doubt that throughout the thousands of centuries during which our species was evolving the hereditary or seed-embedded qualities which are distinctively *human*, the prevailing fecundities of our progenitors must have been heavily *eugenic*. In a biological sense we could not have arrived where we are to-day if that had not been so.

Doubtless those processes of eugenic selection were at times interrupted, occasionally by priestly controls and sometimes by peculiar military and sumptuary practices. But in general, normal operations of fecundity must have been such as to assure relatively more able-bodied and able-minded offspring to successful persons and successful tribes than to the less successful.

Only in our day, seemingly, do various degrees of economic, cultural, and educational success seem so to operate as to weight the

scales of survival severely against eugenic perpetuation of species—even in countries deliberately encouraging high fecundities under inspirations of expansionist ideals.

But so few are the able minds among us who as yet recognize the portents of these conditions and so fewer still are those in the least disposed to do anything about it, that one could easily apprehend that this vast societal disease might yet carry our species far backward before it can be arrested.

But more probably the self-educating activities of large proportions of our abler adults will soon reverse present tendencies. That dysgenic evolutions can be no less effectively prevented by the coöperations of scientists and government than have been the plagues of cholera, yellow fever, and malaria in recent decades seems now patent to most social biologists.

Here, clearly, is one great area of societal reform in which the social sciences, the natural sciences, the agencies of public and private education, and the collective controls of governments can and should presently be massed for action.

And, in conclusion, may not a very vital article of social faith be foreshadowed by the term "self-education"? During the latest two centuries we have seen splendidly exemplified in from five to twenty per cent of all American adults extensive and efficient powers of *self-education*—self-education in the ways of personal success for pioneers, but in only somewhat less measure, self-education in the processes of state-making, religious promotion, family building, large-scale economic coöperations, and self-culture.

Suppose the extensive and expensive schools for children and youth which progressive peoples are everywhere idealizing and promoting should presently, as one of their signal achievements, inspire and equip, not five to twenty per cent, but fifty to eighty per cent of all adults to carry on, with the aid of the nearly limitless means of communication earlier referred to, comparatively efficient *self-educations* from ages twenty-five to seventy. Might not the evolutions of peoples towards scientific controls of *social health* be thereby speeded up no less than have evolutions of controls of *physical health* been speeded up during the latest fifty years?

MEASURING SCIENTIFIC THINKING

By VICTOR H. NOLL

Institute of School Experimentation, Teachers College

THE first two articles in this series* have set forth respectively a description and an analysis of what constitutes scientific thinking, and some principles for developing it. Regardless of whether the point of view expressed in these articles be accepted or not, the need for tests of scientific thinking is obvious. For no matter what one may think as to the nature of the scientific attitude or the procedures to be used for inculcating it, some type of measurement is necessary for the evaluation of any program that may be advocated. It is unfortunate, perhaps, that those who influence educational practice the most do not always recognize this fact. All too frequently, thoughtfully conceived and well-sounding programs are advocated for the accomplishment of this or that purpose, but little attempt is made to suggest procedures for putting them into practice or for evaluating them. If a program for scientific thinking were so unscientific that it lacked proper procedure and evaluation, it would be sad indeed.

I

The purpose of the present article is to detail what is being accomplished to develop tests of scientific thinking which will be consistent with the points of view expressed in the previous articles. The six habits of thinking described in the first article provide the chief basis for this part of the work, as they do for the entire program. These habits are accuracy, suspended judgment, open-mindedness, intellectual honesty, criticalness, and the habit of looking for true cause and effect relationships.

Before giving an account of the nature and construction of these tests, some general considerations regarding the measurement of the scientific attitude should be mentioned. There is a large amount of material in print concerning the measurement of attitudes and

* "The Habit of Scientific Thinking" and "Teaching the Habit of Scientific Thinking" in the October and December 1933 issues of the *Teachers College Record.*

opinions. The testing devices vary in character from simple questionnaires to scales constructed and evaluated by refined statistical procedures. Droba[1] lists one hundred and twenty-five books and articles, most of them published during the five years preceding 1932, which are concerned wholly or in part with the measurement of attitudes. Although there seems to be a large amount of material in print on the measurement of attitudes, not one published, standardized measure of the scientific attitude was found, and very little material was found that had a bearing on any phase of the problem of its measurement.

Several reasons for the lack of standardized tests of the scientific attitude may be suggested. In the first place, it appears that science teachers and others who are interested in the problem have usually thought about the scientific attitude in terms which are more general than those of the sociologists and psychologists. The last-named groups usually think in terms of attitudes toward specific things, such as prohibition, international relations, certain races, divorce, and the like; whereas, workers in the natural sciences seem for the most part to think rather vaguely about the scientific attitude as some superior kind of reacting to situations, without attempting either to define the reactions or to describe the situations to which they are a response.

In the second place, most of the available work on the scientific attitude seems to be based on the assumption that this attitude must be developed and measured by the use of the data of science in the natural science laboratory. This assumption grows out of the fact that the data of science seem exceptionally well suited to quantitative treatment. They are exact enough to permit a high degree of accuracy in measurement and prediction. Moreover, scientific thinking is admittedly the kind of thinking that the scientist is supposed to use in the laboratory; unless he thinks scientifically, his work will be unsuccessful. The present writer's belief is, however, that this type of thinking is even more desirable in everyday life. Relatively few of the pupils in our schools will have need of scientific habits of thinking as research workers in science. Practically everyone will have real need of such habits in their daily activities. The extent to which

[1] Droba, D. D., "Methods for Measuring Attitudes," *Psychological Bulletin*, Vol. XXIX, pp. 309-23, May 1932.

scientific thinking functions should be measured therefore not entirely or even predominantly in the laboratory, but in life situations, and in terms of common experiences.

II

With these considerations in mind, and with the six habits of thinking as a basis, an attempt has been made to construct preliminary forms of a test of scientific thinking. Each question in this test attempts to express a situation which is familiar to most persons, and which affords an opportunity to do some actual scientific thinking. In other words, situations have been described or created in which the person taking the test may exercise one or more of the six habits of thinking which have been proposed as constituting the scientific attitude.

The preliminary form of the test included 134 items most of which were of the true-false type, with a small number of items in multiple-choice form. Approximately 25 items were designed to measure each of the six habits of thinking. A few examples will be given to make clear the nature of each type of item as well as the differences between the various types. These examples should also serve to show, better than any further discussion could do, just how the six fundamental habits of thinking are being used as a basis for the construction of test items.

1. If many persons break a law like Prohibition, it's all right for anyone to do so.
2. There is no use in working any harder than is necessary to "get by."
3. A high forehead is a sign of intelligence.
4. We won the World War because our side was right.
5. Our next president will be a ( ) Democrat, ( ) Republican, ( ) Socialist, ( ) Farmer Labor, ( ) Communist, ( ) Fascist. ( ) There is no basis for predicting the next election accurately.
6. Machinery will eventually replace manual labor completely.
7. The Christian faith is the only true one.
8. Any nation that persecutes the Jews, as Germany has recently done, must be totally uncivilized.
9. One should always support the home team, no matter what the circumstances may be.
10. If my teacher says a thing is so, it must be so.

These statements represent five of the six habits which constitute

scientific thinking. Accuracy is the only habit not represented in this list. The first two items represent intellectual honesty or lack of it. Others of the same type are: "I often get the blame for something I didn't do"; "If the cashier in a store or elsewhere gives me too much change, that is her lookout." These examples of rationalization and of wishful thinking are common pitfalls for the individual who is not honest in his thinking. In most cases they may not be downright falsehoods, but they represent a compromise between right and wrong which at best requires mental gymnastics.

The third and fourth statements bear on situations involving cause and effect relationships. The habit of positing mysterious, unnatural, and false causes for events or phenomena is one of the most common types of unscientific thinking. Other illustrations are: "Tornadoes, earthquakes, and similar catastrophes are punishments for sin" and "It is necessary to have 'pull' to be successful these days."

The fifth and sixth items in the list represent situations where the habit of suspended judgment should operate. This habit is one that, if ever attained, seems to come with mental maturity and by experience. Some mentally immature persons never seem to develop this habit to any appreciable extent. The items designed to measure suspended judgment are, for the most part, similar to example five which consists of a statement followed by a number of possible answers. The statement usually predicts something that cannot be verified, and that may or may not prove to be true.

Items seven and eight are examples of those intended to measure open-mindedness. Bigotry, prejudice, and intolerance are so common that they need hardly be cited except for emphasis. One may have only a few such dislikes, but a wide sampling of situations is almost certain to touch somewhere on a tender spot. Evolution, labor unions, capitalism, Russia, race prejudice, and similar matters present a rich variety of material for testing.

The last two items listed are illustrative of situations in which the habit of criticalness might be exercised. Much of our teaching and directing of young minds rewards and even demands attitudes of laissez faire and uncritical acceptance of authority, while a more critical attitude is sometimes met with resentment. Self-criticism is equally important as criticism of others; but children can hardly be expected to learn to be critical of themselves if they are taught not

to be critical of others. It seems plausible that the two types of criticism are closely related rather than antagonistic, as common practice might lead one to believe. When 57.3 per cent of the children taking the test answer in the affirmative to the question "Do you nearly always feel resentful when anybody finds fault with you or your work?" it seems vain to hope that they will be critical of their own work, or of themselves.

No questions designed to test accuracy have been cited because these utilized diagrams and required considerable space. One or two of them may, however, be described. A simple diagram of the orbits of the earth and Mars around the sun was presented. On this diagram were based about a dozen questions which could all be answered by reference to it. The accurate observer could easily answer the questions correctly; the inaccurate one simply guessed or was unable to answer at all. The question involved no previous knowledge of astronomy, or scientific training. In fact previous knowledge or study of astronomy would probably be of very little help in answering the questions. Other types of items designed to measure accuracy involved crossing out misspelled words in a paragraph (the correct spelling was given beforehand), reading accuracy, accuracy of calculation, and the like.

The preliminary form of test was given to 383 boys and girls enrolled in Grades 8 to 12, inclusive, in one school system. The results show that there are distinct and measurable differences in the thinking of these pupils on the matters with which the test is concerned. The average scores on the test increase regularly from the eighth grade to the twelfth, with one exception which can be accounted for. The scores indicate that the thinking of these pupils becomes more scientific as they go through the high school and as they mature, in so far as the test actually measures scientific thinking. It may be stated parenthetically that statistical data have been developed which lend support to the assumption that the test actually does measure these habits.[2] The results of this testing show also that even the pupils making the highest scores are still far from what would be considered a desirable stage of advancement in this respect. They still are inaccurate, hasty, and not always honest in their thinking;

[2] These data and other technical considerations pertaining to the development and evaluation of the tests will be published elsewhere.

they still jump at conclusions; and they still have unreasonable and unreasoned prejudices and unfounded beliefs.

On the basis of these results, the construction of more test items and the refinement of those already tried out in the preliminary form are being carried on. These items will all be tried out again with the aim of developing two or more comparable forms of a test of scientific thinking. It is planned that these tests can be given in a reasonable time; that they will not be dependent to any great extent upon knowledge of science or other formal schooling; that they will be suitable for use from sixth grade level or thereabouts to superior adult level; and that they will provide reliable and valid measures of the extent to which the habit of scientific thinking functions in the situations and activities of daily life. It is hoped that these tests not only will serve to measure the present status of the thinking of individuals or groups, but will also provide a means for measuring improvement in this respect.

With such tests available it should not only be possible but practical to conduct experiments with school children in the teaching of scientific thinking. The ideas set forth in the first two articles of this series may be used as a basis for developing units of instruction for this purpose. One of the tests may be given at the beginning of the experiment to measure previous ability in scientific thinking, and the other may then be used at the close of the experiment to show improvement. It is only through such procedures that this program, or any other one, can be evaluated.

CONCLUSION

An attempt has been made in and through this series of articles to present a point of view that is believed to be timely and practical. The program outlined may seem to be too idealistic. "You can't teach people to think" is a common stereotype. Perhaps not, but unless they can be taught to think better, education has little justification for existence.

Scientific thinking *is* better thinking. Of course, we all know of respected scientists who are fundamentalists on Sunday mornings, or who are rather hazy regarding their incomes when tax returns are due; but such specific examples do not constitute the majority, and their behavior should cast no reflection on scientific thinking.

It indicates, rather, the non-functioning of ability and desire to do such thinking. When man roamed the earth, living on what he could get by hunting and fishing, he probably had little need of scientific thinking or of any other kind of thinking for that matter. But man lives differently to-day. Our world is one which science has had a large part in making, and we need scientific thinking to get along in it and with it. If suspended judgment, intellectual honesty, open-mindedness, and similar qualities do not make better thinking, then all that we call progress to-day is a snare and a delusion. Improved health, longer life, better schools, and better living conditions—all these have come through the scientific thinking of a few individuals. When all of us learn to think more cautiously, accurately, honestly, critically, and with less prejudice and mysticism, many attainments that at the present time seem out of reach and reason may be hoped for.

The program described here is not intended to be phantasy nor simply a pretty philosophy. I have tried throughout to keep the discussion on a practical basis. In fact these articles are essentially an attempt to take the matter of scientific thinking and its general development out of the realm of speculation and theorizing, and to put them into practical terms. Whether or not the analysis of scientific thinking, the suggestions for developing it, and the tests being constructed will be of genuine and lasting practical value, must be determined by trial. The problem of scientific thinking presents a challenge that may not well be ignored.

BIBLIOGRAPHY

BAIN, READ. "Theory and Measurement of Attitudes and Opinions." *Psychological Bulletin,* Vol. XXVII, pp. 357-99, May 1930.

BEAUCHAMP, ROBERT O. and WEBB, HANOR A. "Resourcefulness, An Unmeasured Ability." *School Science and Mathematics,* Vol. XXVIII, pp. 457-65, May 1927.

BEAUCHAMP, WILBUR L. *Instruction in Science.* National Survey of Secondary Education, Monograph No. 22, United States Office of Education Bulletin, 1932, No. 17. Government Printing Office, Washington, 1933.

BILLETT, R. O. *Provisions for Individual Differences, Marking and Promotion.* National Survey of Secondary Education, Monograph No. 13, United States Office of Education Bulletin, 1932, No. 17. Government Printing Office, Washington, 1932.

BLACKMAN, ABRAHAM. "An Objective Test for the Scientific Attitude." M. S. Thesis, College of the City of New York, 1933.

BROWNELL, W. A. and EASLEY, HOWARD. "Types, Characteristics, and Problems of Learning." *Review of Educational Research,* Vol. III, pp. 289-94, October 1933.

CALDWELL, O. W. and LUNDEEN, G. E. *An Experimental Study of Superstitions and Other Unfounded Beliefs.* Bureau of Publications, Teachers College, Columbia University, New York, 1932.

CAMPBELL, HELEN M. "Prejudiced Thinking of School Children." M. A. Thesis, Colorado State Teachers College, Greeley.

CANTRIL, HADLEY. *General and Specific Attitudes,* Vol. 42, No. 5. Psychological Review Co., Princeton, 1932.

CURTIS, FRANCIS D. *Some Values Derived from Extensive Reading of General Science,* pp. 50-112. Contributions to Education, No. 163. Bureau of Publications, Teachers College, Columbia University, New York, 1924.

DAILY, B. W. *The Ability of High School Pupils to Select Essential Data in Solving Problems.* Contributions to Education, No. 190. Bureau of Publications, Teachers College, Columbia University, New York, 1925.

DEWEY, JOHN. *How We Think.* D. C. Heath and Company, Boston, 1910.

DEWEY, JOHN. "Science and the Education of Man." *Characters and Events,* Vol. II, p. 765. Henry Holt & Company, New York, 1929.

DEWEY, JOHN. "The Supreme Intellectual Obligation." *Science Education,* Vol. XVIII, pp. 1-4, February 1934.

DOWNING, ELLIOT R. "The Elements and Safeguards of Scientific Thinking." *The Scientific Monthly,* Vol. XXVI, pp. 231-43, March 1928.

DROBA, D. D. "Methods for Measuring Attitudes." *Psychological Bulletin,* Vol. XXIX, pp. 309-23, May 1932.

HARTSHORNE, HUGH and MAY, MARK A. *Studies in Deceit.* The Macmillan Company, New York, 1928.

HERRING, JOHN P. "Measurements of Some Abilities in Scientific Thinking." *Journal of Educational Psychology,* Vol. IX, pp. 535-58, December 1918.

HEWINS, NELLIE P. *The Doctrine of Formal Discipline in the Light of Experimental Investigation.* Educational Psychology Monographs, No. 16. Warwick and York, Inc., Baltimore, 1916.

MOORE, EVELYN B. "A Study of Scientific Attitudes as Related to Factual Knowledge." M. A. Thesis, University of Chicago, 1928.

NICHOLS, M. LOUISE. "The High School Student and Scientific Method." *Journal of Educational Psychology,* Vol. XX, pp. 196-204, March 1929.

PEARSON, KARL. *The Grammar of Science,* Part I. Third Edition. The Macmillan Company, New York, 1911.

RICE, HELEN MARY. "The Emergence of the Scientific Attitude and Method as an Objective for Science in the Elementary School." M. A. Thesis, Ohio State University, Columbus, 1932.

SHAFER, B. F. "The Relationship between a Knowledge of the Principles and Laws of Physics and the Ability to Make Applications." M. A. Thesis, University of Chicago, 1923.

SINCLAIR, JAMES H. and TOLMAN, RUTH S. "An Attempt to Study the Effect of Scientific Training upon Prejudice and Illogicality of Thought." *Journal of Educational Psychology,* Vol. XXIV, pp. 362-70, May 1933.

SMITH, MARCUS S. "Change in the Attitudes of Secondary School Pupils." M. A. Thesis, Syracuse University, 1933.

SMITH, RUFUS A. "An Attempt to Measure Scientific Attitudes." M. A. Thesis, George Peabody College for Teachers, Nashville, 1931.

STRAUSS, SAM. "Some Results for the Test of Scientific Thinking." *Science Education,* Vol. XVI, pp. 89-93, December 1931.

SYMONDS, PERCIVAL M. *The Nature of Conduct.* The Macmillan Company, New York, 1928.

THORNDIKE, E. L. *The Fundamentals of Learning.* Bureau of Publications, Teachers College, Columbia University, New York, 1932.

SCIENCE IN THE NEW SECONDARY SCHOOL

By H. EMMETT BROWN

Instructor in Natural Sciences, Teachers College

IT IS significant that of all the complaints that have been made in recent years against the secondary school, very few, if any, have been couched in terms of a criticism of the fundamental philosophy of secondary education. Instead we hear inveighings against "excessive costs," "too many frills," and other excrescences of our educational system. There is a very good reason for this. There never has been any clear-cut and definite philosophy of secondary education which squared with the teaching practice. Much of the discussion and controversy which engages the attention of educators now is a result of the belated attempt to arrive at some guiding principles for the secondary school. Reorganization of the secondary school must take its departure from general objectives which will be acceptable, because they are clear and understandable, to a considerable body of teachers and the public alike. The disposition made of subject matter fields found in the present curricula, in the revisions thereof, depends upon our conception of the function of secondary education. Reorganizations of secondary school science must be similarly conceived.

There has been a disposition on the part of some curriculum makers to assume that since science has played such a dominant rôle in determining the character of our present civilization, it must occupy a position of similar importance in curriculum revisions. They therefore are likely to accept the present organization of science courses without much question. "Are the contributions of science to the scheme of secondary education sufficient to justify its continued inclusion?" and "Is the present organization of science courses worthy of perpetuation?" are questions that should not be answered by an *a priori* "Yes." In the present article, I shall attempt to give a reasoned answer to these questions, particularly as they are applied to the physical sciences of the senior high school.

ENROLLMENT IN SCIENCE COURSES

A glance at the enrollment figures in science is illuminating. "In 1910, 82 per cent of the total enrollment in public high schools were studying some science, 65 per cent in 1915, 64 per cent in 1922 and 61 per cent in 1928."[1] A drop of 3 per cent occurs between the years 1922 and 1928. At first thought one might attribute the loss to an increased diversity of high school offering only. Let us study the figures further. In that same period, biology, which first appears in the Office of Education figures in 1915, gains from approximately 9 per cent of the total enrollment in public high schools to about 13.5 per cent. General science, which first appeared in the figures in 1922, has increased in enrollment about 32 per cent (although in per cent of the total high school population it shows a slight decrease from 18.27 per cent in 1922 to 17.5 per cent in 1928). The cause for the general drop in the percentage of pupils who are taking some science is not hard to find. While the total high school enrollment was increasing from 2,155,000 in 1922 to 2,900,000 in 1928, or about 35 per cent, the number of students enrolled in physics courses increased only about 6,000—a 3 per cent increase in actual numbers. In percentage of the high school population there was, of course, a decided decrease. Chemistry fared somewhat better in having about 45,000 new students, an increase of 28 per cent over the 1922 enrollment. However, even this rate of increase is smaller than the rate of growth of the high school population. Even Latin, which at this time is definitely on the decline, gained more than twice as many new students as did physics. (In all fairness it must be admitted that Latin's gain in proportion to its total enrollment was considerably less than that for physics.) And this during a period that witnessed the development of the radio, the great expansion of aviation, increased use of the X-ray, and a widespread public interest in science as attested by increasing space allotted to science articles in newspapers and magazines!

A further study of enrollment figures since 1890 reveals a continuous decrease in the percentages of the public school population enrolled in physics classes (22.2 per cent in 1890 decreasing to 6.85 per cent in 1928) and a somewhat similar situation in chemistry (10.1 per cent in 1890 decreasing to 6.76 per cent in 1905, increasing slightly to 7.40 per cent in 1922 and decreasing to 7.07 per cent in 1928).

[1] *Biennial Survey of Education, 1926-28*, p. 966. Bulletin, 1930, No. 16, U. S. Department of the Interior, Office of Education, Washington, D. C.

Throughout much of this period also, science instruction in the elementary schools was increasing at a rate almost certainly faster than the rate of growth of these same schools. At the other extreme, the college, it is probable, although the figures are not readily obtainable, that enrollment in science courses is increasing at a more rapid rate than is the total college population. Such would certainly seem to be true of engineering colleges. In 1928 there were about seven times as many students enrolled in high school physics courses as in 1890 and the total enrollments in colleges, universities, and professional schools had increased at about the same rate. And yet in 1928 there were about thirty-two times as many students in college engineering courses based on physics (civil, mechanical, and electrical engineering) as there were in 1890, when the only engineering course listed in the figures of the Department of Education was that in civil engineering.

Furthermore, to quote from the *Biennial Survey of Education, 1926-28,* "As physics is generally a fourth year subject, and since the proportion of students in the fourth year has been *increasing,* the drop in pupils studying physics is *even greater* than these figures indicate." (Italics mine.)

However, it should be pointed out that these figures are somewhat misleading. Undoubtedly the organization of courses in general science, with materials selected in larger proportion from the subject matter of physics than from any of the other fields of organized scientific knowledge, played a definite but indeterminable part in affecting the physics enrollment. That many students failed to elect physics because they felt they already had skimmed the cream of that subject in general science courses, is almost a certainty. Then, too, there has been an increasing tendency to offer a greater diversity of subjects in the high school and, at the same time, to give the students greater freedom in selecting from this enlarged curriculum. This greater freedom has, in many schools, been brought about by removing many of the traditionally required subjects, among them physics and chemistry, from lists of required subjects. The very "set-up" of the special science subjects may have operated to their disadvantage. Physics, chemistry, and, in a lesser degree, biology, have been the only high school subjects that have demanded more than five periods a week. In how many schools this demand has reduced the enrollment, or eliminated one or more of these subjects from the curriculum, can only be surmised.

Other reasons may be advanced, perhaps, to explain away all, or part, of this very apparent decline in the popularity of the physical sciences. It must be evident, however, that these very "alibis" argue no less eloquently than do the enrollment figures themselves, for the necessity of a thoroughgoing reëvaluation of what is being done in high school courses in physics and chemistry.

CAUSES FOR THE DECLINE

Had the period from 1890 to 1928 been one of generally declining public interest in things scientific, the falling off in the percentage of the high school population enrolled in the physical science courses would have been expected. Since there was no such decline in public interest but rather an augmented curiosity with respect to scientific matters, an explanation is in order.

As has been pointed out by the Committee on the Teaching of Science in the Thirty-first Yearbook of the National Society for the Study of Education,[2] "The traditional support for physics and chemistry has been stated in terms of (1) formal discipline, (2) knowledge, and (3) college preparation." Courses in physics and chemistry came into the curriculum at a time when they had to meet the competition of the traditional college entrance subjects. One of the main supports for the older subjects was their disciplinary value. Hence science courses were supported on a similar basis. To-day, although the doctrine of discipline is largely discredited, courses in the physical sciences in the secondary school (and other courses as well) survive—little changed in form and content from the day when they first received the stamp of college approval.

To support the knowledge objective which traditionally has been the justification for physics and chemistry might seem feasible, until it is realized that no one has ever really taken the trouble to ascertain, on anything approaching a scientific basis, what knowledge is desirable, or even to formulate the principles which should be the basis for determining this knowledge. The result, as has been pointed out many times, was that the subject matter of physics and chemistry became mere dilutions of the college courses in those subjects. In teaching practice, this led to an emphasis on the mere acquisition of factual

[2] Powers, S. Ralph and Others, *A Program for Teaching Science*, Thirty-first Yearbook of the National Society for the Study of Education, Part I, p. 24. Public School Publishing Co., Bloomington, Ill., 1932.

knowledge and an encyclopaedic type of learning. It is probably demonstrable that the growth of courses in applied physics, household physics, household chemistry, and the like, is due to conflicting views with respect to this knowledge objective. It might still be argued that the acquisition of factual knowledge is sufficiently desirable to justify such an objective. When, however, the results of many recent studies show how small is the fund of information that students really possess at the completion of science courses, this position becomes untenable.

The college preparation objective was epitomized by the establishment of a board, a visible agency for the translation of the desires of the colleges themselves into practice. Here, at last, was something definite. Here was an agency which was able, and did not hesitate, to speak with great clarity on what should be included in high school physics and chemistry courses. Here, at last, was something which actually defined what should be taught. The result was a selection of subject matter reasonably effective as a means of reducing the number of applicants for admission to college, but quite unsuited to the general education of boys and girls of high school age. If all high school graduates went to college, this situation would have been bad enough, but when we consider that a large proportion of the pupils who study science in high school do not enter college and of those who do only a few become specialists in science, we cannot but be doubtful of the validity of the college preparation objective for the physical sciences.

Courses in physics and chemistry have been held in traditional grooves because educators have meekly accepted, and still accept in large part, these three general objectives for science, with all that this acceptance entails—routinized learning, standardization of texts, college domination, the measuring of success of teacher and pupil alike in terms of a score on a single examination.

I do not wish to imply that there has been no improvement in science teaching since 1890. There has been. The emphasis on project teaching[8] helped greatly. The recent emphasis on the unit organization will undoubtedly prove of value. These changes have been improvements in the technique of teaching. The content is still in large part determined by the textbook, which in turn is based upon the traditional objectives. There has been no fundamental reorganization of the sub-

[8] *Reorganization of Science in Secondary Schools*, Bulletin, 1920, No. 26, U. S. Department of the Interior, Bureau of Education, Washington, D. C.

ject matter itself. One has only to examine the numerous state and city courses of study in physics and chemistry to see how much they resemble the courses of years ago—and one another. In very few cases have they had any pronounced effect upon teaching practices, nor would their complete disappearance make for more than a passing ripple on the surface of educational placidity. It is time that we critically reëxamine our fundamental educational assumptions in the light of all that experience and modern psychology have to offer.

SCIENCE AND THE NEW CURRICULUM

Let us clear the ground by first disposing of the traditional justifications of science and other secondary school subjects. No subject shall be included because it "disciplines the mind"—no one believes that that is accomplished. No subject shall be included merely because it contains an encyclopaedic collection of interesting facts. Above all, no subject shall be included merely because it is acceptable to college examining boards. The secondary school cannot hope to achieve its destiny until it realizes that its objective is the education of its students and not, except incidentally, their preparation for college. There can be little progress until the secondary school is united and uncompromising in its position in this matter.

It is entirely beyond the scope of this article to attempt to enumerate a really comprehensive list of the general objectives of secondary education. It is equally impossible to offer exhaustive proof of the validity of such objectives as may be set forth. However, many educators would agree that two very important functions of secondary education are:

1) To give students the necessary information and understanding to the end that they may make as satisfactory an adjustment as possible to the complex society of to-day and that they may be prepared to assist in determining its character.
2) To give students the necessary information and understanding to the end that they may make as satisfactory an adjustment as possible to their natural environment and that they may be prepared to assist in determining its character.

As a result of a reasonable achievement in the direction of the latter objective, there would emerge such outcomes as: an understanding of

man's place in the universe; a release from the superstitions and taboos that inhibit the uninformed; an understanding of the nature of the forces at play in common phenomena; and many others. On the first page of William James's *Pragmatism* there appears this statement, ". . . the most practical and important thing about a man is still his view of the universe."

There are other functions of secondary education, such as the aesthetic and creative function, the technique and skill function, which are of great importance and require careful consideration in any plan of reorganization. However, I wish to consider here only the two objectives relating to environment. If we accept the first as valid, we at once see necessity for instruction in the field known as the social sciences. If we accept the second as valid, instruction in the natural sciences is indicated. Can these two objectives be achieved as completely as desirable in any program which attempts to fuse these broad areas of human knowledge and experience in some sort of combined, correlated, or integrated course, or in which instruction in these two fields becomes incidental to the development of some unit of work, as in modern elementary schools? It seems almost axiomatic that achievement of these objectives can be the outcome of only such educational experiences as are deliberately selected with the objectives in mind. Equally obvious would seem to be the desirability of preserving the integrity of social science and natural science as broad fields for high school instruction.

But may it not be argued that present courses in biology, physics, and chemistry serve the latter function? They do, but inadequately, particularly in the case of the physical sciences.

There are two reasons for the inadequacy of the physical sciences. The first lies in the small proportion of the high school that is reached, at present, by instruction in physics and chemistry. Probably not more than four or five per cent of the high school population elect both subjects. The second reason lies in the subjects themselves. Patently neither subject, nor a combination of both, will adequately interpret the student's environment.

It may be argued, also, that general science courses are organized to interpret the student's natural environment on the secondary level. And so they do, in part. But at the age level at which much of the general science course material is presented, the maturity of the students

is not sufficient to permit of an understanding of many of the implications of the broad concepts of science there developed. There is a genuine need for a reëvaluation of "man's universe" at the greater maturity level of the senior high school. Recent years have witnessed the rapid spread of science survey courses in the freshman year of college. These have arisen, I believe, because of the high school's failure to give its graduates an adequate picture of the physical universe, from which the special sciences of the college level may take their departure. Truly here is an anomaly. The college takes over a task which the high school should but doesn't do because the college itself, by its adherence to a repressive scheme of entrance examinations, makes impossible the assumption of this responsibility. Fortunately there is being manifested a tendency on the part of the colleges to meet the secondary schools halfway in the matter of entrance requirements. Whether the colleges become willing to extend to all high schools the privileges now about to be extended to a few under the provisions of the experiment initiated by the Progressive Education Association, depends upon the secondary schools themselves. A challenge is being extended to these schools to devise a really effective scheme of education. Accepting the dictum that science will contribute a rather large share in that educational scheme, let us try to discover the probable character of the contribution.

In another place,[4] I have attempted to show that for a number of years scientists have been pursuing lines of investigation which made for an ever greater unification of separate science fields. However, "the tendency toward integration, illustrated by the development of science itself, which resulted in the evolution of integrated biology and general science courses, was thwarted in the case of the physical sciences by the imposition of arbitrary standards from above. Such integration as has taken place in the physical sciences has been forced by new findings in the subject matter itself, not by a conscious attempt in that direction." If this be true, then the physical science courses of the future will be an integration of science materials from all fields, taking their departure from the general science and biology courses, and paying particular attention to the techniques now used so successfully in determining the course of study in science for the elementary grades

[4] Brown, H. Emmett, "Some Educational Implications of Recent Developments in Science," *School Science and Mathematics*, Vol. XXXIII, pp. 490-505, May 1933.

in such schools as the Horace Mann School of Teachers College.

Such a course in the physical sciences would be organized around large science themes (objectives) which are selected according to what are believed to be valid standards (criteria). These criteria may, and probably will, be general objectives for all secondary education. The sense in which the word objective will be used here in connection with physical science courses may best be defined by the following quotation from the same yearbook to which reference has already been made:[5] "The principles and generalizations that ramify most widely into human affairs may be stated as objectives of science education. The objective may be seen then as differing from the aim of education chiefly in its scope. The aim of education is life enrichment. The enriched life is one that enables the individual to participate intelligently and with satisfaction in the experience of living. The objectives may be stated as the principles and generalizations that are functional for the individual, in that they enable him to interpret the experiences of living."

For the criteria by which objectives may be selected, we may tentatively accept the three criteria set up for elementary science in another part of the same yearbook, in the article by Craig.[6]

These are:

1) Certain objectives . . . should conform to those conceptions (1) that greatly influence the thinking of the individuals who learn their meaning and (2) that have modified thinking in many fields outside of science.
2) Certain objectives . . . should conform to those goals (information, skills and habits) in science that are important because of their function in establishing health, economy, and safety in private and public life.
3) Certain objectives . . . should conform to those facts, principles, generalizations and hypotheses of science that are essential to the interpretation of the natural phenomena that commonly challenge children.

These criteria may be somewhat amplified and given as a number of short, succinct statements as was done by Pieper, writing in the same yearbook on science for the seventh, eighth, and ninth grades.

Bearing in mind, then, the greater maturity of the students for whom the course is intended, and their greater ability to appreciate things beyond their own immediate environment, the objectives for a

[5] *Op. cit.*, footnote 2, p. 43.
[6] *Op. cit.*, footnote 2, pp. 134-41.

course designed to explore adequately the physical universe may be determined. A tentative list of such objectives[7] framed in accordance with this scheme includes a number of statements of which the following are typical:

1) The movements of the earth, the other planets, and their satellites, and of the stars themselves are controlled by gravitational attractions.
2) Weather and climate depend upon the varying amounts of solar radiation which reach the different parts of the earth's surface, and are modified by movements of the atmosphere and oceans, and by the surface features of the earth.
3) The earth's surface has been continually changed by the action of natural forces and it is still undergoing change.
4) A chemical change is always accompanied by an energy change.
5) Machines are devices for transforming and transferring energy usefully.

The teaching material used to assist the student to acquire a satisfactory understanding of any one of these objectives would constitute a unit of instruction. The subject matter of the unit would be that material which is deemed most suitable for this purpose, irrespective of the conventional classification of that subject matter as physics, chemistry, astronomy, or geology. From previous work in elementary science, general science, and biology, the student will undoubtedly have a considerable body of ideas to contribute to his work in the unit. For example, in the unit dealing with the first objective on the above list, "The movements of the earth, etc.," he will probably be the possessor of many facts about the nature, size, orbits, and distances of planets. He may even have considerable appreciation of the function of gravitational attraction in the system. The physical science course would further refine his notions of gravity and gravitational forces, and explain such things as why it is that the period of revolution of the planets around the sun increases with their distance from that star. As a result of the instruction, the student will see new relations, not glimpsed in previous science work, and will see the reasons for many statements about the planets and the earth that he had to take "on faith" previously.

[7] The list consists of twenty-six statements, including the five given, and three inclusive generalizations dealing with the transference and transformation of energy in the universe. It was drawn up by a committee composed of H. J. Arnold, A. I. Lockhart, and the writer, all of the staff of the department of Natural Sciences of Teachers College, and represents the bringing together of considerable previous work done by the committee members and other groups.

Opponents of such an organization of the physical science work in the secondary school may argue that it duplicates to too great an extent the work done in previous grades. It can be seen, however, from the above very brief outline of the development of an objective, that what is intended is an extension, as well as an enrichment and clarification, of notions obtained from previous science work. I do not wish to intimate that care must not be taken to insure against wasteful duplication. Quite the contrary. The integrated physical science course must definitely build on previous work in science. Its success is to a large extent conditioned by the extent to which this is accomplished.

A similar type of development will be used with all units. Physics, chemistry, geology, astronomy—whatever science is needed—will contribute. Some units will draw more heavily from one organized body of knowledge than from another. It is extremely improbable that any one unit will draw exclusively from one field.

It may very well be also that there devolves upon instruction in the physical sciences the additional necessity of pointing out with particular care those scientific facts and generalizations which have had the greatest effect upon the philosophic thought of the human race—in short, to furnish the student with those facts most likely to aid him in forming his own personal philosophy. "The mandate of science brooks no denial. It does not require that education shall engage in any program of teaching disbelief in current religious dogma. It does require that education shall prepare students to meet the challenge to such dogma that expanding scientific knowledge offers."[8] To recognize this as a function of secondary science education, supplies an additional meaning to the first of the criteria listed on page 702. It also suggests that in the planning of such a course there should always be provided numerous opportunities for the frank discussion of many phases of scientific knowledge in their relation to the fields of human thought upon which they impinge.

Our second criterion referred to the function of science "in establishing health, economy, and safety in private and public life." Downing has said,[9] "The science of the high school needs to be taught as a preparation for life, as a consumer science, rather than as producer

[8] *Thirty-first Yearbook, loc. cit.*, footnote 4, p. 502.

[9] Downing, E. R., "A New Interpretation of the Function of High School Science," *Journal of Higher Education*, Vol. IV, pp. 365-67, October 1933.

science." By that I infer that he means that there should be some place in the secondary school curriculum, probably in the physical sciences, where the necessary techniques and information may be taught to the end that, as a consumer, the student will be intelligently critical of the quality of the goods offered for sale, and of the methods employed in their manufacture and distribution. Specifically, I would have him aware: of the continuous and insidious barrage of propaganda that assails his eye and ear from all sides; of the dangers inherent in self-medication with nostrums whose makers are attempting to capitalize on public interest in the latest scientific trend; of the poisons on the skin of the shiny red apple; of the inefficiency of mouth washes; of the fact that high prices are no guarantee of a correspondingly high quality; of the continual endeavor by concerns and individuals, crassly indifferent to the injury they do, to block every attempt to secure an adequate governmental control over the manufacture and distribution of consumer goods. I would, in short, have him educated for his life as a consumer, as well as for that of an educated layman. It may be then that opportunity should be afforded in this integrated course, in connection with one or more units that are predominantly chemical in nature, or perhaps as a separate unit, to learn of these matters.

It will be recalled that of the possible general objectives of secondary education, two were singled out for specific mention. It seemed that instruction in the natural sciences is the best means for accomplishing the second of these objectives. If this was a valid objective, and it seemed to be, an additional conclusion is forced upon us. The integrated, revised course in the physical sciences, should be *required of all students*. How else can we hope that students, emerging from the secondary school, shall have the information, habits, and attitudes necessary for a successful adjustment to their physical environment?

This places a heavy premium upon the careful selection of reading and experience material for the attainment of the objectives of the course. It will undoubtedly result in the omission of much material that has heretofore been considered valid for the more highly selected seven per cent of the students taking chemistry or physics. At first thought, such a requirement may seem to be an abandonment of the principle of individual freedom in the schools. This is not the case. Provisions for individual differences will be met within the course itself

by carefully selected types of activities, suitable to different levels of ability and interest and by the character of the course itself. In spite of different abilities to perceive and understand our physical environment, much of that environment evokes responses that are similar for all. If this be true, it would seem possible and even necessary to teach all high school students how to understand better these common elements of the physical environment. Surely, secondary school pupils are a sufficiently homogeneous group, so that a subject matter "common denominator" in the physical sciences may be found. The administrative set-up of the reorganized school will need to be such that ample provision is made for the student who wishes to explore more deeply into science than it is possible to do in this course. This may take the form of free periods when the student may work in the laboratory, or engage in other activities. Or it may take the form of additional special science courses, or of some combination or modification of both.

The year in which this course shall be given, and the number of weekly periods, are points upon which it may be difficult to agree. Reorganization of the biological sciences, while less pressing than in the physical sciences, is nevertheless needed. Time allotment depends, in great part, upon the character of the reorganization in the other field. There must not be any attempt on the part of any one group of science teachers to secure a disproportionate share of the time available in the new curriculum for their subject. Science education must be thought of as a continuous process. That apportionment of time between the physical and biological sciences is best which most effectively serves the ends of science education. Ideally, perhaps, the course should run throughout both the eleventh and twelfth years, but meeting less frequently than do present courses in physics and chemistry. Beginning in the fall of 1934 and running for two consecutive years, the attempt will be made to present this course at the Lincoln School of Teachers College. At the end of that time many details of organization that now seem vague will undoubtedly become clear.

SUMMARY

The critical state of secondary school physical science was first shown, in contrast with widespread public interest in science, large enrollments

in general science and biology, and a rapid spread of engineering education. The cause for this condition seemed to be a perpetuation of out-moded objectives, resulting in the crystallization of courses in conventional molds. This has transpired in spite of many sincere efforts toward reorganization.

The teaching of science as a separate body of knowledge was then justified because of its contribution to man's understanding of his physical universe. Finally, the character of a new course in the physical sciences, organized around broad science themes, was presented. These themes, selected without regard to the subject matter boundaries across which they cut, and chosen in accordance with certain valid criteria, are the objectives of an integrated course in physical science which, because of the basic character of its contribution to the aims of secondary education, should be required of all students.

DEVELOPING A STATE-WIDE PROGRAM FOR THE SMALL SECONDARY SCHOOL*

By FRANK W. CYR

Associate in Rural Education, Teachers College

IN MANY states the small secondary school constitutes the major problem of state high school inspectors. In thirty-seven states more than 50 per cent of the public high schools have fewer than 100 pupils, and include a large proportion of the total enrollment. At the same time these schools have less adequate local leadership, personnel, and equipment than the larger schools and thus need more guidance from the state education department. They also face greater obstacles in the provision of an adequate program largely because of the way in which secondary education has developed in the United States.

How then can the state inspector or supervisor most effectively attack the problems which these schools face? How can he formulate and direct a state-wide program for the enrichment of the curriculum of the small secondary school at this time, when budgets are so limited? This problem presents a real challenge. On the one hand are increasing demands that a curriculum be provided which will prepare for living in a rapidly changing world. On the other, budgets are being curtailed.

RÔLE OF THE SMALL HIGH SCHOOL IN SECONDARY EDUCATION

To make a fundamental attack on this problem we must first examine and analyze the present situation. What is the importance of the small high school? What is its significance in the total educational program? And what problems are characteristic of the small school because of its size?

According to the last Biennial Report of the United States Office of Education, published in 1930, 54 per cent of the public high schools

* An address given at a meeting of the National Association of High School Inspectors and Supervisors, Cleveland, Ohio, February 27, 1934.

of the United States have an enrollment of fewer than 100 pupils, and more than 74 per cent have an enrollment of fewer than 200 pupils. Those with enrollments of fewer than 100 pupils include approximately 14 per cent of the total secondary population and those with enrollments of fewer than 200 pupils serve approximately 27 per cent of the total secondary population. The proportion served by small schools is much greater in some states. In seven states more than 70 per cent of the high schools have fewer than 100 pupils. This discussion will deal primarily with these schools since it is here that our chief problems occur in their most serious form.

These schools are now abundant. As Lincoln said of the common people, "The Lord must have loved them, he made so many of them." But the question arises, are they a permanent part of the educational system or will they soon disappear, along with the Indian and the buffalo, as civilization progresses? Gaumnitz[1] shows that between 1926 and 1930 four-year rural high schools increased in all size groups except those enrolling fewer than 30 pupils. In 1926 there were 9,926 rural four-year high schools with a total enrollment of 793,980 pupils. By 1930 these numbers had increased to 11,742 schools with an enrollment of 1,025,509. Considering only high schools of fewer than 100 enrollment, there were 7,500 in 1926 as compared with 8,313 in 1930. This was an increase of 813 schools during that four-year period.

Gaumnitz shows further that high schools in rural areas are not reaching as large a proportion of the population of high school age as are high schools in cities. He estimates that for 1930, rural high schools were reaching 40 per cent of the population fourteen to seventeen years of age while urban schools were reaching 58 per cent, or nearly half again as many. The increase since 1930 in pupils attending high school has probably made this disparity greater. He also points out that there is a fairly high correlation between the number of schools provided in rural communities and the proportion of those attending high school. Apparently the rural high schools must reach a much larger proportion of those living in the areas they serve

[1] Unless otherwise indicated all references are to chapters in the 1934 yearbook of the Department of Rural Education of the National Education Association, entitled *Economical Enrichment of the Small Secondary-School Curriculum*. This yearbook, edited by the writer, presents examples of the successful use, throughout the United States, of the methods and techniques referred to in this article.

than they now do, and schools can be consolidated and enlarged only when they maintain or increase present availability.

A study by Stearns of the relation of density of population to size of school has a bearing on this problem. He discovered a fairly high correlation (.82) between density of population and size of high school in Pennsylvania counties. As long as people live in rural areas where the population is less dense, there will probably be a tendency toward smaller high schools.

Up to this point high school trends alone have been considered. This is not enough. The educational system is strongly influenced by the great social and economic movements throughout the whole structure of society. Probably one of the most significant of these movements, as it affects size of high schools, is that of the great population migrations between country and city. As the United States became settled and the frontiers closed, the westward migrations gradually ceased, and great movements of population from farm and village to city began. In 1880, 71 per cent of the population of the United States lived in rural areas, that is, on the farm or in villages of less than 2,500 inhabitants, while only 29 per cent lived in cities. By 1900 this had changed. Only 60 per cent of the people were rural and 40 per cent lived in cities. By 1920 an even greater change had taken place. For the first time in the history of the United States more people were living in cities than in the country, with 51 per cent urban and 49 per cent rural. By 1930, ten years later, this trend had increased until only 44 per cent of our population were rural and 56 per cent were urban. During this period of expansion and cityward movement, attention was directed toward the city in education, as elsewhere, and the smaller rural schools received comparatively little attention. Even national leaders were beginning to say that soon the population would be crowded into a few industrial centers and the rural regions depopulated.

Then the depression came, and with it a great change. The country to city movement was reversed and a migration from city to country began. During 1932 more than half a million more people moved from cities to farms than from farms to cities. On December 31, 1932 there were more than a million more people on farms than on January 1 of that year. On January 1, 1933 there were 32,000,000 people living on farms, which is the largest number in the history

of the United States. What does this mean? It means that the drain of population from country to city has been definitely checked and that a large rural population will probably constitute a permanent part of our national life.

What then will be the future of the small secondary school? Considering the increase in the number of small schools between 1926 and 1930, the fact that small schools now reach only 40 per cent of their constituency, that there are fairly high positive correlations between the number of schools and the proportion of population reached and between density of population and size of school, and that the rural population is a permanent part of our national life, it seems reasonable to conclude that the small secondary school will continue to have an important place in our program of American secondary education for at least several generations to come.

PROBLEMS CHARACTERISTIC OF THE SMALL SCHOOL

The question may now be considered, what problems are characteristic of the small school because of its size? In considering these problems we must remember that they are probably due as much to the way in which our high school system has developed in the United States as to any characteristics fundamentally inherent in smallness. Lists of such characteristics have been made already.[2] These include special difficulties of financing, providing an effective teaching staff, providing an adequate curriculum, securing adequate administration and supervision, developing a satisfactory physical plant, and carrying on an extracurricular program—all these problems smallness of the school increases, or even creates. No attempt will be made here to enumerate them in detail.

It is necessary, however, to analyze two special problems characteristic of the small school, as a basis for a fundamental attack on the whole situation. These are (1) the low pupil-teacher ratio and (2) the large number of subject preparations per teacher. They are both characteristic of small schools since both tend to disappear as the size of the school increases. A careful study of the relationship between

[2] Ferriss, E. N., *The Rural High School, Its Organization and Curriculum.* United States Bureau of Education Bulletin 1925, No. 10. Government Printing Office, Washington, 1925.

Rufi, John, *The Small High School.* Contributions to Education, No. 236. Bureau of Publications, Teachers College, Columbia University, 1926.

Gaumnitz, W. H., *The Smallness of America's Rural High Schools.* United States Bureau of Education Bulletin 1930, No. 10. Government Printing Office, Washington, 1930.

pupil-teacher ratio and size of high school, based on data from 31 states, showed that the median number of pupils per teacher rises from 13.2 in schools with enrollments of 20 pupils to 24 in schools with an enrollment of 500. When the data were charted on a graph the median curve rose rapidly until schools of 80 pupils were reached, then held with a fair degree of steadiness at a pupil-teacher ratio of 20 to 21 for schools between 80 and 180 enrollment. It rose sharply again between 180 and 200 where it reached a ratio of 23 pupils per teacher. For schools between 200 and 500 enrollment the pupil-teacher ratio fluctuated around 23. The variation in schools with enrollments of more than 200 is so small that, apparently, increases in size have little effect. The low pupil-teacher ratio is definitely a characteristic of the small school and the problems it raises are particularly serious in schools with fewer than 80 pupils. This low pupil-teacher ratio is primarily responsible for the high per-pupil costs found in small schools, even with poorly paid teachers and a narrow, meager curriculum. The small school is emphasizing quantity rather than quality. It has too few highly qualified teachers and too many poorly qualified ones. Williams, in a recent study of Iowa schools, says, "Our rural ungraded [high] schools enroll 29 per cent of the entire state enrollment, but employ 38 per cent of the teachers. Comparatively, our first class cities teach 23 per cent of the states' pupils with but 16 per cent of our teachers."[3]

Here is a vital spot for an attack on the problems of the small high school. It will be possible to provide a more adequate curriculum without increasing the cost by developing methods and techniques for enriching the curriculum which, at the same time, increase the pupil-teacher ratio.

The second special problem is the large number of daily subject preparations per teacher in small schools. While the low pupil-teacher ratio just discussed tends to lighten the teaching load in the small school, this is more than counterbalanced by the large number of subjects and subject fields in which the teacher must make daily preparation. Soper's study of New York State high schools with enrollments of 24 to 500 showed a gradual decrease in the number of daily subject preparations per teacher as the school became larger.

[3] Williams, R. C., *Educational Programs of Smaller Graded and High Schools.* Research Bulletin No. 14, June 1933. Department of Public Instruction, Des Moines, Iowa.

When a graph was constructed, the median curve descended from 6.5 daily preparations per teacher in schools of 24 pupils to 4 in schools of 500 pupils. This means that the teacher in the smaller schools has 2.5 more subjects for which daily preparation is necessary and mastery needed than the teacher in the larger schools. Here again there is a sharp drop in the curve for the small schools and then a gradual leveling off as they become larger.

A teacher cannot make careful daily preparations in five or six different, often unrelated, subjects, to say nothing of mastering five or six different fields of knowledge. This situation not only results in a weak offering, but also puts undue strain on the teacher who is constantly faced with the futility of attempting to do thorough work. Here then is another important point where the problem of the small school must be attacked. Methods and techniques which will relieve the teacher's burden of daily subject preparations must be utilized. These will be discussed later.

THE BASIS FOR AN ADEQUATE STATE PROGRAM

With this picture of the small secondary school in mind we must now formulate a definite program of attack on the situation. Equalization of educational opportunity demands the provision of a broad, comprehensive, and enriched curriculum adapted to the interests, abilities, and capacities of each individual pupil—a curriculum comparable in quality to that of large city schools. The importance to our national life of a healthy, wholesome, intelligent, and well-trained rural population requires the provision of an effective program in the small secondary school. How can this be done? What is the basis for such a program?

First, a scientific approach to the problems of the small school must be developed.

A wholesale condemnation of the small school because certain preconceived standards are not met is of little value. An attitude of defeatism can never result in progress. Instead the situation must be carefully and open-mindedly analyzed to discover and evaluate both the good and the bad. Such an appraisal will reveal the advantages of the small school, and at the same time give a clearer understanding of its weaknesses. Efforts toward improvement can then

be more effectively directed. A scientific attitude on the part of the state education department and the teachers college will develop a scientific spirit among principals and superintendents. The writer visited a number of small high schools in Nebraska some time ago and was interested to discover that the principals of all these schools were studying, with the scientific approach, some problem in connection with their school. Under the guidance of the Teachers College of the University, through field courses or Master's theses, they were attacking their own problems. In these schools, with enrollments ranging from 35 to 150 pupils, such studies would have been impossible without proper relationships between local school and teachers college. Every teachers college might well develop such relationships with the schools in its attendance area. Each high school would then become a laboratory for the study of curriculum enrichment problems.

Second, ability to think in terms of the functions or purposes of secondary education must be developed.

In the beginning, secondary schools were founded to accomplish certain functions. As they became established and time went on, the system became more complex and means rather than ends became more and more important. To-day we think and talk in terms of buildings, classrooms, subjects, number of pupils enrolled, number of teachers employed, length of class period, size of the budget, junior high schools, and senior high schools rather than in terms of the results to be accomplished in the lives of boys and girls. If our thinking were in terms of the functions of the school in providing preparation for living, our conceptions of the means to be employed might be very different.

Suppose, in the study of general science, for example, we thought in terms of the concepts to be taught rather than, as usual, in terms of textbooks, class recitations, laboratory exercises and equipment. Take the concept of the transformation of energy. All sorts of illustrations in the laboratory and the community immediately come to mind. A discarded Ford engine and magneto could be set up in the laboratory to generate electricity, the process of combustion in a gas engine observed, a trip made to the local power plant, or a study made of plant growth. These all offer excellent opportunity for

study, and the relation of the concept to the pupils' environment is clearly evident. Thinking in terms of the effect on the life of the child makes available a wide variety of resources with which to work —resources that may be utilized with very little or no expense.

Professor C. J. Lynde of Columbia University has about three hundred experiments illustrating principles in physics which are performed with equipment obtained in the home or in the ten-cent store. The total cost of equipment for the entire three hundred experiments is less than five dollars. These experiments with ordinary tin cans, fruit jars, milk bottles, newspapers, and sink stoppers are much more dramatic and stimulating to the imagination than the traditional physics experiments with carefully prepared and expensive equipment usually are.

A clear understanding of the functions of the junior high school grades with their broadening and finding courses and group activities; and of the senior high school grades with their more highly specialized intensive training, and a clear conception of the objectives of each course offered would bring into the school large resources now unused. And, more important, it would open the way for the development and utilization of techniques and methods particularly adapted to the needs of the small school. While the basic functions of all schools both large and small are fundamentally the same, the means of performing them in small schools may be very different.

Third, methods and techniques adapted to the needs of small schools must displace traditional procedures which are the result of blindly imitating large schools.

The small school has been blindly imitating the large. It has either adopted bodily those methods which proved successful in the large school, or reproached itself for its inability to do so. In one case a small school copied its plans for science rooms. This produced a lecture room with raised seats which would accommodate about twenty pupils. On either side were a chemistry laboratory equipped for eight pupils and a physics laboratory of the same size. These separate laboratories were built despite the fact that physics and chemistry were taught only on alternate years. It was not until one large room was obtained by removing two partitions and the raised seats that a satisfactory science program could be developed.

Another small school, designed by a hotel architect, was provided with expensive toilet facilities adequate for a large hotel. Such practices carried a little further would mean that if the De Witt Clinton High School in New York City, with its 12,500 pupils and hundreds of rooms, were providing a satisfactory educational program, a building for a school with 100 pupils should be exactly the same except that each part would be reduced in proportion. Such a building would be little more than a sizable ant hill or at best a rabbit warren. This sounds absurd, but it is little more absurd than our attempt in the small school to pattern after the large school—to use the same types of buildings and rooms, the same kinds of teaching materials, the same types of subject matter specialists for teachers and to crowd all these specialists into the local school, to have the same length of class period for teaching four pupils as for teaching forty, and to provide the same extracurricular activities.

Instead of the small specialized science laboratories which are wholly inadequate, how much more sensible it is to provide one large room for shop and laboratory purposes as Benton Township Consolidated School in Lackawanna County, Pennsylvania, has done. There the room was so planned that not only science but a wide variety of shop work including woodwork, auto-mechanics, electrical wiring, sheet-metal work, plumbing, concrete mixing, forge work, and rough carpentering can be effectively studied. This shop is designed to provide for many varied activities through which pupils may discover and develop their interests, abilities, and capacities. It makes possible the integrated, well-rounded shop program for which large schools are now striving.

The small school in its rural community has many advantages in providing an integrated curriculum closely related to the activities of the community. In Carmel, New York, a careful study of pupils' interests and needs is made, and then community resources are used to develop and meet them. A local banker teaches a course in practical accounting. At the same time a high school boy goes to the bank to work two hours a week, a local artist teaches art to a high school girl, the blacksmith trains two tenth-grade boys in his shop, a boy with a bent toward medicine works in the doctor's office, and girls, according to their various abilities, receive first-hand experiences with the county social worker, the school nurse, the school

librarian, and a primary teacher. In Lennox, South Dakota, the community and its problems are used as the basis for the social studies program. In Santee, Nebraska, through a community survey carried out by the school, data have been collected on the family, education, property, the church, health, social activities, and the home. The results obtained constitute an integral part of the curriculum throughout the high school. The high school at Whitmell, Virginia, has developed an effective program of school-community integration centering around its commencement activities, and Ellerbe, North Carolina, is an outstanding example of how the curriculum may grow out of and return to enrich the life of the whole community. In these communities valuable educational resources have been made available at little or no additional cost, through intelligent leadership and guidance.

Two years ago the writer talked with a principal of a small high school seventy miles from Chicago who maintained that he could not offer an occupations course because he had no occupations to study. He did not realize that there was a great variety among the occupations in his community with which the pupils should be familiar, and trips to Chicago were too difficult. Yet the principal of a rural high school of forty pupils in southern Kansas has organized a month's excursion for his juniors and seniors, which is to be made in May. They plan to visit the Tennessee Valley Project, Washington, Philadelphia, New York, Boston, Niagara Falls, Detroit, and Chicago. The courses this year in history, music, art, literature, science, and American problems have been centered about the excursion. Even the home economics classes have participated by planning meals. The whole trip has been so planned that there will be little or no additional expense to the local school. From these examples of the use of available resources, one is inclined to believe that intelligent leadership is as important as financial resources.

Instead of attempting to place within the walls of the local school building all the subject matter specialists needed, how much more sensible it would be to put a few highly qualified teachers in the local school and bring to their assistance subject matter specialists who serve the schools of an entire county or state. This would mean new divisions of labor. Instead of vertical divisions between subjects, there would be horizontal divisions of labor within a subject,

between the local teacher and the subject matter specialist. The function of the local teacher would be to integrate the curriculum and to encourage, guide, and direct the learning process within the school through a broad knowledge of the general fields. The subject matter specialist would then furnish the specialized knowledge necessary and organize it into usable form. The local teacher should have a well-rounded personality, broad cultural background, and ability to hold the confidence and arouse the enthusiasm of pupils and community. The subject matter specialist working in the state teachers college, state department of education, or office of the county superintendent should have thorough technical training in his special field. Such a division of labor has already developed to a considerable degree between local school and state university in Nebraska through the use of supervised correspondence courses and individual instruction materials. The same division of labor is also evolving in Massachusetts where the state education department furnishes the correspondence courses and at Benton Harbor, Michigan, where the courses are largely supplied by a commercial institution. Other examples might be cited. This is one of the most promising methods for the provision of an enriched curriculum in the small secondary school.

Another medium through which the subject matter specialist could serve a large number of small schools is the radio. Experimentation in this field is greatly needed.

The circuit teacher provides another method by which the specialist can reach several schools and a larger number of pupils. In Ohio, circuit teachers are sometimes employed on the county superintendent's staff to teach music in the schools of the county. They travel from school to school on regular schedules. In Maryland, the county music supervisors perform a similar function. In Pennsylvania, some counties employ county supervisors of agriculture and home economics who are in reality circuit teachers serving as many as eight different schools and 170 pupils. In Columbia County, Pennsylvania, two schools twenty-four miles apart have employed a teacher of vocational agriculture and a teacher of vocational economics. These two teachers go to one school in the morning and to the other in the afternoon. Thus both schools are served at a reasonable cost.

Time does not permit a discussion of techniques for the use of

small groups, such as provision of individual instruction materials, supervised correspondence courses, circuit teachers, and the alternation of classes. It must be noted, however, that all these methods of enriching the curriculum also tend to increase the pupil-teacher ratio and decrease the burden of daily subject-preparations per teacher. They therefore meet the requirements proposed in the beginning for methods which will enrich the curriculum of the small school economically.

This raises the question of standards of accrediting for the small school. Our standards have been set up largely in terms of the large school. They have also been primarily in terms of the means by which education is carried on, such as buildings, classrooms, length of periods, and the certifications of teachers. Would not an evaluation of the educational product be more effective than evaluation of the school plant? Should not the emphasis be on accrediting the pupil rather than the school? The experiments in this direction now being carried on by the Progressive Education Association should be watched with interest by those responsible for the program of the small secondary school.

The fourth important phase of a state-wide program is that of reorganization and consolidation.

Improved transportation and communication have brought about great changes in rural life. Neighborhoods have merged into communities, which are in closer contact with state and national life. Often, however, where paved highways, automobiles, busses, power lines, and other modern improvements have entered a community there has been no change in the school organization. Reorganization and redistricting are needed. Reorganization of the four-year high school into a six-year school usually produces a more desirable educational offering, according to the findings of Spaulding in the National Survey of Secondary Education.[4] It makes possible a more flexible program, permits realization of the functions of the junior high school, and is more economical than the junior-senior high school organization.

Redistricting is needed to make school district lines coterminous

[4] Francis T. Spaulding, O. I. Frederick, Leonard V. Koos, *The Reorganization of Secondary Education.* Monograph No. 5, National Survey of Secondary Education, 1933. Government Printing Office, Washington, 1933.

with the natural boundaries of the community. Many difficulties which have arisen with consolidation are due to sporadic consolidations which did not take into consideration all the local factors involved. Careful surveys of each local situation through county-wide surveys such as those conducted in Arkansas and Missouri go far to remedy this situation. In New York's centralized school districts are found excellent examples of curriculum enrichment through consolidation.

Another type of reorganization of utmost importance is that necessary to give a larger local unit such as the county greater responsibility in the administration of the educational program. Attempts to perform all administrative duties in the small local school continue to prove costly and inefficient. Many of the modern needs of an educational system including well-trained leadership, supervision, health service, library facilities, and circuit teachers can be provided much more economically by a unit such as the county which includes a group of community districts. A recent study by the writer[5] shows that in many states the county superintendent has practically no responsibility for the secondary school program. In states where the county superintendent has such responsibilities, the state high school supervisor has an avenue through which he can reach the small school.

CONCLUSION

I have discussed the importance of the small secondary school program in numbers of schools, in equalization of educational opportunity, and in the perpetuation of a healthy, intelligent, well-trained rural population. I have suggested that a careful analysis of the small secondary school's problems is necessary and have discussed two special problems characteristic of small schools: (1) the low pupil-teacher ratio; and (2) the large number of daily subject-preparations per teacher. Four basic elements in a state-wide program for the enrichment of the curriculum of the small secondary school have been proposed. These are: (1) a scientific approach, (2) ability to think in terms of the functions of the school, (3) the development of methods and techniques for performing these functions in terms of the small school's needs, and (4) a program of reorganization and redistricting adapted to local needs. The fol-

[5] Cyr, Frank W., *Responsibility for Rural-School Administration.* Contributions to Education No. 579. Bureau of Publications, Teachers College, Columbia University, New York, 1933.

lowing methods and techniques for accomplishing this program have been proposed: (1) development of proper coöperative relationships between teachers colleges, state departments, and local schools for purposes of research and experimentation, (2) planning the building in terms of curriculum needs, (3) study and utilization of community resources, (4) development of new divisions of labor between local teacher and subject matter specialist, (5) use of individual instruction materials, (6) use of supervised correspondence courses, (7) use of radio, (8) provision of circuit teachers, (9) reorganization of six-year high schools, (10) scientific redistricting of schools, and (11) development of the larger local administrative unit.

How Old Is the New Social Order Movement?

I AM indebted to Professor Franklin T. Baker for reminding me of the appropriateness for modern times of the following pages from James Russell Lowell's essay on "Thoreau,"* which are herewith submitted with annotations in case those who run cannot read. The Apostles of the Newness are apparently not new.

I. L. KANDEL

WHAT contemporary, if he was in the fighting period of his life, (since Nature sets limits about her conscription for spiritual fields, as the state does in physical warfare,) will ever forget what was somewhat vaguely called the "Transcendental Movement"[1] of thirty years ago? Apparently set astirring by Carlyle's essays on the "Signs of the Times," and on "History," the final and more immediate impulse seemed to be given by "Sartor Resartus." At least the republication in Boston of that wonderful Abraham à Sancta Clara sermon on Lear's text of the miserable forked radish gave the signal for a sudden mental and moral mutiny. *Ecce nunc tempus acceptabile!* was shouted on all hands with every variety of emphasis, and by voices of every conceivable pitch, representing the three sexes of men, women, and Lady Mary Wortley Montagues.[2]

* The following pages are reprinted from James Russell Lowell's *My Study Windows* (Boston, 1905, pp. 193-94) by permission of the Houghton Mifflin Company.

[1] Pragmatism or Technocracy or Technology, varying with the taste and interests of the reader, may be substituted.

[2] Shaw, I think, divided mankind into men, women, and educators.

The nameless eagle of the tree Ygdrasil was about to sit at last, and wild-eyed enthusiasts[3] rushed from all sides, each eager to thrust under the mystic bird that chalk egg from which the new and fairer Creation was to be hatched in due time. *Redeunt Saturnia regna,*[4]—so far was certain, though in what shape, or by what methods, was still a matter of debate. Every possible form of intellectual and physical dyspepsia brought forth its gospel. Bran had its prophets, and the presartorial simplicity of Adam its martyrs, tailored impromptu from the tar-pot by incensed neighbors, and sent forth to illustrate the "feathered Mercury," as defined by Webster and Worcester. Plainness of speech was carried to a pitch that would have taken away the breath of George Fox; and even swearing had its evangelists, who answered a simple inquiry after their health with an elaborate ingenuity of imprecation that might have been honorably mentioned by Marlborough in general orders.[5] Everybody had a mission (with a capital M) to attend to everybody-else's business.[6] No brain but had its private maggot, which must have found pitiably short commons sometimes.[7] Not a few impecunious zealots abjured the use of money (unless earned by other people), professing to live on the internal revenues of the spirit. Some had an assurance of instant millennium so soon as hooks and eyes should be substituted for buttons.[8] Communities were established where everything was to be common but common-sense. Men renounced their old gods, and hesitated only whether to bestow their furloughed allegiance on Thor or Budh. Conventions[9] were held for every hitherto inconceivable purpose. The belated gift of tongues,[10] as among the Fifth Monarchy men, spread like a contagion, rendering its victims incomprehensible to all Christian men; whether equally so to the most distant possible heathen or not was unexperimented, though many would have subscribed liberally that a fair trial might be made. It was the pentecost of Shinar. The day of utterances reproduced the day of rebuses and anagrams, and there was nothing so simple that uncial letters and the style of Diphilus the Labyrinth could not turn into a riddle.

[3] Professor Judd has recently called them "the highly vocal radicals"; both phrases may be used interchangeably to-day.

[4] Note the synonyms used by Lowell—*tempus acceptabile, Saturnia regna,* new and fairer Creation as contrasted with the mystic and insistent beat on the modern drum—new social order.

[5] Far be it from the annotator to say that this charge can be brought against the modern evangelists; but he cannot resist the feeling that this may be the effect on those to whom they bring their gospel.

[6] This is now called being "socially minded."

[7] Unfortunately this is not so true to-day.

[8] An early premonition of Technocracy or the great Technology.

[9] cf. the modern panel discussions.

[10] Like activity curriculum, climate of opinion, frame of reference, unit of experience, integrated personality, shared decisions, concomitant learnings, specificity, mind-set, set-up, group thinking, panel discussions, and compartmentalized thinking.

New Studies in Education

THE DEVELOPMENTAL STATUS OF THE PRESCHOOL CHILD AS A PROGNOSIS OF FUTURE DEVELOPMENT*

THE purpose of this study was twofold. The first was to investigate the reliability of two preschool intelligence tests, namely, the Kuhlmann-Binet and the Merrill-Palmer. A statistical analysis was made of results between retests given after intervals of six, twelve, eighteen, and twenty-four months. A total of 205 children were included, the number in analyses ranging from 12 to 109. The results of 874 tests were included in the study. The second purpose was to determine the developmental status of fifty nursery school children, through an analysis of the data kept for each child during a minimum of four school years, in order to compare the nursery school status with the later status of the child.

FINDINGS

The general findings based on the analysis of results from the Kuhlmann-Binet Scale and the Merrill-Palmer Scale follow.

1. The reliability of the Kuhlmann-Binet Scale and the Merrill-Palmer Scale is low when individual prediction is sought from an initial test to a retest or from one test to a retest after a six- or twelve-months' interval. Correlation coefficients ranged from .56 to .76 between results on retests of the Kuhlmann-Binet Scale and from .47 to .60 between results on retests of the Merrill-Palmer Scale.

2. There was a consistent tendency for the mean I.Q. of a group on a retest to be higher than the mean I.Q. of the same group on an initial test or the first test of a series.

3. Results from retests showed a greater percentage of children increasing their scores than decreasing them.

4. No sex differences were noted in the aptitude of either sex for a particular type of test. There was some indication that the girls' I.Q. ratings tended to fluctuate more than the boys', but the trend was not consistent.

5. The correlations between scores on the Kuhlmann-Binet and Merrill-Palmer Scales, given within two weeks of each other, ranged from .55 to .76 and were approximately the same as those between retests of either scale given after intervals of six months.

6. The highest mean I.Q.'s obtained for the groups tested on the Merrill-Palmer Scale did not equal the lowest mean I.Q.'s for the same groups tested within two weeks on the Kuhlmann-Binet Scale.

* By GERTRUDE P. DRISCOLL, Ph.D. Teachers College, Columbia University, Child Development Monographs, No. 13.

7. A correlation of .66 was obtained between the scores of the children tested between two and three years of age on the Kuhlmann-Binet and at five years or over on the Stanford-Binet; the correlation was .71 between the scores of the children tested between three and four years of age on the Kuhlmann-Binet and at five years or over on the Stanford-Binet.

CONCLUSIONS

The following conclusions were drawn from the analysis of records of the fifty children in the follow-up study:

1. When the children were classified into the categories of "genius," "very superior," "superior," and "normal," (*a*) the general complexity of development decreased in the analysis of the genius and normal groups; (*b*) language as an item passed above the child's mental age decreased.

2. As an index of prognosis for physical development alone, the height to age ratio may be valid and fairly reliable, but for prognosing mental development it would not be valid.

3. The predictive value of the preschool test is limited as judged by the overlapping of types of personality adjustment of the children in the several categories and by variation in educational achievement.

4. When the children were reclassified on the basis of a composite rating, which represented the individual's functional ability, prognosis of future development as determined by a composite rating was more accurate.

SOME PROBLEMS IN THE PROVISION OF PROFESSIONAL EDUCATION FOR COLLEGE TEACHERS*

THE professional education, other than that relating directly to mastery of subject, now available or being provided prospective or beginning college teachers was studied to determine its nature, availability, and influence in the subsequent work of beginning teachers. Five types of experiences were studied from this point of view: (1) courses in education designed particularly for college teachers and/or administrators, (2) teaching assistantships or fellowships, (3) observation of undergraduate college teaching while pursuing graduate work, (4) visitation of college classes taught by more experienced members of the department during the first year of college teaching, and (5) guidance, assistance, and supervision by other members of the department during the first year of college teaching. The place which professional education for college teaching should hold in graduate schools and in the administration of higher education was developed through a dialectic treatment of philosophical considerations and research in the field revealed through documentary analysis.

Representative persons who had taught the "regular or academic" college subjects for ten years or less were surveyed to the number of 1071, 539 of whom

* By HAROLD MOORE BYRAM, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 576.

furnished data and opinion on the last four of the five types of experience referred to previously. Of 188 college teachers who have taken special courses in education particularly designed for them or for college administrators, 122, or 65 per cent, furnished data and opinion. A check list of 40 college problems or problem areas constructed from available analyses, interviews with college teachers, and analysis of literature on college teaching was submitted to secure data of five types: (1) to find the extent to which each problem is met by beginning college teachers; (2) to find those problems especially difficult for college teachers to solve during their first year of teaching; (3) to find the problems treated in special courses in education which are offered for college teachers and administrators; (4) to determine the problems for which these courses had provided greatest help in solving; (5) to determine problems whose solution was most aided by each of the other types of experience studied. Seventeen professors of education furnished information relative to the problems treated in courses of the type studied which they taught, and opinion as to the problems which should receive treatment in an ideal program. College and university catalogues and data in the files of the Association of American Colleges were used in determining the development and present status of courses in education for college teachers.

FINDINGS

Seventeen principles were developed which it is believed should be considered by those in charge of graduate education in our universities, and by those in charge of the improvement of college instruction. The evidence quite clearly points to the need for providing beginning college teachers with education which will tend to fit them as teachers as well as specialists in subject matter. It is also clear that graduate schools should assume the teacher preparation responsibility since the majority of recipients of the Doctor's degree go into teaching rather than, or in addition to, research.

The contention that professional education should be different for teachers of each subject is challenged by this study. College teachers studied revealed that they had met virtually the same problems or areas of problems, regardless of subject taught, and the problems were ranked practically the same in difficulty by teachers divided according to subject taught.

Of all types of experience studied, that of studying college teaching in course was least frequently found among beginning teachers, although institutions offering such courses have greatly increased in number recently and the number of courses offered by each institution has greatly increased. This experience was indicated as having been more consistently helpful on problems which are difficult than the other experiences, and more helpful to beginning teachers than to experienced teachers, but as varying greatly depending upon content. Courses dealing directly with instructional problems were cited as being more valuable than those dealing mostly with problems of administration.

Although about half the teachers studied reported one or more of these experiences, it was found that the teachers of the various subjects have not shared equally in them. In general, teachers of the natural sciences have had considerably more preparation through the experiences studied than have other

teachers. Experience as assistants and observation of college teaching seemed to offer help on the easier problems rather than the difficult ones. Extreme variations in the helpfulness of experience as an assistant or a fellow were found and were believed to show evidence of lack of planning with real professional education in mind, or total lack of expectation that such experience should be educative.

In spite of the inadequacies of the several types of experiences studied it is concluded that existing potential values inherent in them warrant the encouragement of enlarged facilities along several lines. It is suggested that prospective college teachers study the problems of society in connection with the determination of aims and purposes of collegiate education and study the psychology and psychological problems of students of college age. Courses in education dealing with college instructional problems should be offered in graduate schools which prepare college teachers. Provision should also be made for directed observation and practice in college teaching together with opportunity to engage in research in college instructional problems.

SUPPORT OF STATE EDUCATIONAL PROGRAMS BY DEDICATION OF SPECIFIC REVENUES AND BY GENERAL REVENUE APPROPRIATIONS*

THIS study aims, first, to find the extent to which dedicated revenue and general revenue appropriations were used for the support of state educational programs during the decade ending in 1930; second, to determine whether one of these policies, i.e., dedicated revenue or general revenue appropriations, is more effective in securing assured financing of these activities; and third, to find out if the effectiveness of either or both of these policies is conditioned by the type of state fiscal administration under which the policy is employed.

The term "dedicated revenues" as used in this study applies to those revenues which are derived from designated sources, such as special tax levies, and, at the time of their collection, are set aside in special expendable funds which may be used only for specified activities of government. An example of dedicated revenue for an educational activity is a three mill tax on general property within the state, the proceeds of which are set aside in a special school fund which may be used only for state aid for public schools. General revenue appropriations, on the other hand, are made at each meeting of the state legislature, and are paid from the state general revenue fund.

CONCLUSIONS

For the United States as a whole the per cent which dedicated tax revenue for state support of public schools and colleges and universities is of total revenue

* By WILLIAM IRVIN PEARMAN, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 591.

for these same activities decreased during the decade ending in 1930. This decrease in revenue was met by an increase in the per cent produced by tuition and other earnings of institutions and from rents on lands and interest on permanent funds. There was a noticeable tendency throughout the United States as a whole toward an increasing reliance upon general revenue appropriations for state aid for public schools.

Neither the dedication policy nor the appropriation policy, in itself, insures continuity of support of state educational activities. In the first place, the type of general fiscal administration employed by the state may determine which policy should be used. This is true especially of colleges and universities. In states with defective fiscal set-ups, where logrolling, bargaining, and other questionable political practices may operate, dedicated tax revenue seems to offer the only immediate protection for support of these institutions. Such a policy, however, has some very definite limitations. A dedicated tax of fixed rate, while it affords more freedom from legislative control than a tax which is changed often, does not provide revenue which is flexible enough to meet the need of state educational institutions. This is probably one of the reasons why these institutions tend to relinquish their mill taxes when satisfactory schemes of fiscal administration are adopted by the states in which they are located, and, conversely, state educational institutions tend to retain their mill taxes in those states in which a satisfactory scheme of fiscal administration has not evolved.

In the second place, the methods used by the state to distribute educational funds among the different educational activities seem to have a definite bearing on whether the dedication or appropriation policy is used. This is true particularly of the methods which are used to apportion public school funds among local school districts. The continuity of support of public schools seems to be safeguarded most effectively by distribution of state revenue among local schools on the basis of guarantees. The dedication policy is rather definitely associated with the practice of prorating state money among local school systems on some basis involving population. Prorating is believed to be the least equitable of any method in use by states for apportioning aid among local schools. As prorating is discontinued and is replaced by guarantees to local districts, the dedication policy becomes less necessary as a protection against irregularities in the trend of state support.

As yet, no dogmatic conclusions may be drawn concerning the relative merits of the dedication policy, as opposed to the appropriation policy, for the country as a whole, or even for individual states. It appears that practical realities still exist in some states which suggest the necessity of the dedication policy if reasonable continuity of financial support is to be guaranteed state educational activities. On the other hand, when sound budgetary practice is in operation and the state has adopted a policy of assisting local school districts according to a satisfactory and objective measure of educational need, the desirability of the appropriation policy appears to be very clear.

Teachers College *in the* News

COMPILED BY CLYDE R. MILLER

DIRECTOR, BUREAU OF EDUCATIONAL SERVICE

"Teachers College, as an institution, holds no position, advocates no theory of education. It selects its faculty and, as every such institution must, permits each member untrammeled to present whatever his reflections and his researches lead him to believe."

From the *New York World-Telegram*—

Failures in Reading Laid to Economies in Schools

A warning of a large current increase of failures in reading, a catastrophe for children equivalent to "marital or financial failure" for an adult, was posted by Dr. Arthur I. Gates of Teachers College, speaking before the Society for the Experimental Study of Education, at the City College 23rd Street building.

The evidence indicates that certain school economies are responsible for these failures, said Dr. Gates, who had a leading part in organizing the current CWA coaching project for "slow readers" in the city schools.

"There is evidence that a serious reading disability may, in course of time, be the cause of various types of serious misconduct, personality disorders and criminal activities," said Dr. Gates.

"There is some evidence that increase in the size of classes and decreases in quantity and quality of teaching materials, as a result of the depression, are producing a larger number of failures and serious disabilities in reading than are to be found in normal times."

Dr. Gates revealed results of a study he had made of 100 children who failed, or were backward in reading, showing that they suffered from one or more of the following:

Nervous tensions and habits, such as stuttering, nail-biting, restlessness, insomnia and pathological illnesses—ten cases.

Putting up a bold front as a defense reaction, loud talk, defiant conduct, sullenness—sixteen cases.

Retreat reactions, as withdrawal from ordinary associations, joining of outside gangs and frequent truancy—fourteen cases.

Counter-attack, as making mischief in school, playing practical jokes, making raids on property, thefts, destructiveness, cruelty, bullying and general disturbances in class—eighteen cases.

Withdrawing reactions, as mind-wandering, daydreaming and other introvert behavior—twenty-six cases.

Extreme self-consciousness or sensitivity, becoming easily injured, blushing, anti-social behavior, developing peculiar fads and frills and eccentricities, inferiority feelings—thirty-three cases.

Give up or submissive adjustments, as shown by inattentiveness, indifference, apparent laziness, going into volitional slumps—thirty-three cases.

In only eight cases, said Dr. Gates, did the pupil develop a constructive compensatory reaction, such as special talent in drawing, singing, dramatics, etc.

Evidence that the children's ailments were a result, not a cause, of their reading difficulty was cited by Dr. Gates from another study, which showed that a group of children who failed in reading

had been essentially on a par before entering school with another group who became good readers. Their abnormalities developed as they fell behind in reading.

"When caught in the initial stages," Dr. Gates continued, "these disabilities may be diagnosed and corrected. If neglected they are likely to develop into one or more of the types of maladjustment mentioned, which not only will be a serious, if not a disastrous matter to the individual child, but will be detrimental and very expensive to society.

"Early detection and correction in and of itself is far less expensive than diagnosis and treatment later, not to mention the expense of retardation in other subjects as a consequence."

From the *New York Post*—

Teachers Revolt at Butler Stand on Child Labor

Twelve leading educators at Teachers College, Columbia University, joined in repudiating the attack of Dr. Nicholas Murray Butler, president of the university, on the child labor amendment.

While declaring that properly supervised work is beneficial from the educational standpoint, the professors agreed that the exploitation of children must be banned. They asserted that, under present conditions working is not only physically and morally detrimental to children, but that child labor is economically harmful since it lowers wage standards and creates unemployment.

The educators said that the problem of child labor must be solved nationally and not by the individual states.

Most of the professors in commenting upon Dr. Butler's assertion that the child labor amendment would prevent children from doing chores about the house, characterized it as "nonsense."

Dr. George Drayton Strayer, director of the Division of Field Studies of the Institute of Educational Research, declared that he could not "see the validity of Dr. Butler's objection or of any of the other objections which have been raised. I feel," he continued, "that the problem must be attacked on a national scale."

"I don't think the amendment attempts to prevent children from washing dishes," Dr. Paul R. Hanna, assistant professor of education, said, "I certainly am in favor of an amendment which would restrict child labor in agriculture and in heavy industry. It is an economic necessity. As for the claim that it lessens parental authority, I think control of a child ought to be taken away from parents who exploit that child."

Dr. George S. Counts, professor of education, said:

"Those are the sorts of objections which have been raised by reactionaries to all sorts of social legislation. I favor the amendment. I think it highly desirable."

Dr. Jesse H. Newlon, director of the Lincoln School, said:

"I do not conceive that these problems can be dealt with as local. Not the states but the Federal Government must take legislative action to abolish child labor."

After disagreeing with the proposals of former Governor Alfred E. Smith, Dr. Willystine Goodsell, associate professor of education, remarked of Dr. Butler's statement: "That's a stupid comment. The government does not attempt to interfere with the rights of parents in any way. It merely attempts to prevent their children from being exploited. I thoroughly believe in the amendment. I think the attacks on it have been unintelligent."

"I think child labor should be regulated by law," said Dr. Clarence Linton, assistant professor of education and secretary of Teachers College.

Dr. Carter Alexander, professor of education, said, "It's a good thing. I don't think it practical to regulate the evil through the States as has been suggested."

"I think the child needs protection," declared Dr. Percival M. Symonds, associate professor of education. "And I think we should treat the matter on a national basis."

Dr. Otis William Caldwell, professor of education and director of the Institute of School Experimentation, said:

"I think the amendment is a good thing. Certain exceptions should, however, be made. Some children ought to be made to work for their own benefit. However, that problem can easily be solved by educators."

Dr. William C. Bagley, professor of education, said he was in favor of the amendment because "it is demanded economically." "The jobs now held by children should be given to adults," he said.

Dr. Thomas Henry Briggs, professor of education, likewise expressed approval of the amendment.

From the *New York Sun*—

Huge Loss Seen in Ventilation

Schools Waste $2,000,000 a Year, Is Estimate

Unnecessary or impracticable ventilation equipment is costly not only to New York city schools, but to schools throughout the country, according to investigators of Columbia University. In his inquiry for the Governor's Commission of School Costs, Professor George D. Strayer reported that few of the schools in New York City use their mechanical ventilation systems and he estimated that approximately 10 per cent of the construction costs had gone into such equipment.

Another committee at Teachers College, Columbia University, reported similar conditions throughout the country. In New York State alone, it is estimated, the waste runs to $2,000,000 a year.

Elaborate systems of ventilation now used in the vast majority of public schools are unnecessary and, in many cases, actually harmful, the report states. The study contends that open windows serve the same purpose.

Recommendations urging the immediate revision of existing laws and regulations which limit the ventilation of schoolhouses to the single system of mechanical ventilation are made by the report. It observes that the window-gravity method of ventilation for school classrooms is generally more satisfactory than the mechanical systems.

The survey further explains that, in numerous tests made, a system of window-gravity ventilation with air admitted over slanting window boards and tempered by radiation below the windows and with gravity exhaust ducts for removing vitiated air from near the ceiling proved highly satisfactory.

Although at the present time many states require schoolrooms to have a flow of thirty cubic feet of air per minute, the report says that it makes no difference to the health of pupils whether this air is provided by a plenum fan, a unit ventilator or a window inlet.

"Assuming that 15 cubic feet of air per minute per pupil will supply ample ventilation, the fan system, supplying 30 cubic feet per minute, wastes the heat necessary to warm 15 feet of air 30 degrees every minute and for every child," the investigators say. "If but one-half of the 2,000,000 school children of New York State are in fan-ventilated schoolrooms, there is a direct waste of $2,000,000 a year, in money burnt up and poured into the circumambient atmosphere."

In schools where outdoor noise or dust may make it inadvisable to keep windows open, fan ventilation may be advisable, the report goes on.

"In many classrooms, however, we are convinced that window-gravity ventilation will provide an entirely satisfactory solution of the problem of ventilation," it adds. "We believe that under such conditions this system may be preferred for the schoolroom, as producing equally healthful and more comfortable conditions."

From the *New York Evening Journal*—

Winter Children Trifle Dumb, Says Expert Who Wasn't One

April's children may be this and May's children may be that but Winter's children are inclined to be a trifle dumb.

Such is the conclusion of Dr. Rudolf Pintner, professor of education, Teachers College, Columbia University.

Emerging from a mountainous pile of charts, graphs, statistics and logistic curves, the bewildered savant concludes that there is something about the months of January, February and March which lays a frost over the brains of children born in this stormy season.

To prove his point, the psychologist cites his work in tabulating the intelligence scores of more than 22,000 public school children. He used all manner of tests—Thorndike, Army, Alpha and others. But they all showed the same results. Dr. Pintner explained:

"There were exceptions, of course, there isn't any iron-bound rule. But on the average anyone born in these three months doesn't reach as high an I. Q. as a person born in any other time of the year."

At first the doctor thought that poor children born in winter might be more subject to disease which would impair their brain power. But he checked up on wealthy children and got the same results.

Now the doctor is thumbing through *Who's Who* to find out how the winter's blight affected some of the nation's great. After that he will tackle the *Encyclopedia Britannica.*

Dr. Pintner was born in November, which isn't winter!

From the *New York Times*—

Dr. McGaughy Sees End of "Cramming"

The elementary school educational system of the country will be drastically revised in the near future, Dr. J. R. McGaughy, of the department of elementary education of Teachers College, Columbia University, predicted in an address in the Horace Mann auditorium of Teachers College.

According to Dr. McGaughy, the elementary schools will emerge "from the era of cramming" by eliminating the present system of educational rating of school work and by discarding the system of grading according to chronological age.

Dr. McGaughy spoke at the closing session of a two-day conference of elementary school workers which more than four hundred elementary school educators and administrators from New York, New Jersey, Connecticut, Massachusetts, Vermont and Pennsylvania attended. The conference adopted a resolution calling for a similar conference to be held at Teachers College in May.

Under Professor McGaughy's proposed elementary school program, the present "dullards" would be ranked as equals of the "gifted" students, since the present system of rating by a "few marks" on paper would be abolished. To accomplish this end, it will be neces-

sary to "scrap" the elementary school system "we have spent twenty years in developing," Professor McGaughy stated.

"Medicine droppers and measuring spoons of the old system of teaching healthy diet will be replaced by good wholesome meals of good wholesome foods in which the children will actually eat and learn," Professor McGaughy explained.

"Subject matter mastery, as such, will have a very small place in the curriculum. The curriculum should be, above everything else, a whole lot of living with those about you—a matter of happy, successful living together and facing real problems of real children in a real school.

"We shall make all the use we can of the environment about us. We will use the whole environment as a really living situation. This will be a living school for which we can set no artificial standards, in which the leadership will be humane and the pupil will be treated as an individual.

"The administration of the new school will not be that of an autocrat—it will be a democratic administration. That means real social planning. It isn't a matter of the school and the community, but a school in the community.

"We will get away as far as we can from regimentation. All tendencies are away from regimentation. It seems to me that regimentation is simply an effort to perpetuate old traditions. We will have different school buildings, too. They will not be, as often as at present, simply class rooms stacked up as a child stacks blocks."

Professor McGaughy's address followed a report of the discussions of twelve panels, which met earlier in the morning. Chairmen of the panels were Professors Jean Betzner, H. B. Bruner, Fannie W. Dunn, Paul R. Hanna, M. B. Hillegas, Lois C. Mossman, Robert B. Raup, Edward H. Reisner, Florence B. Stratemeyer, J. R. McGaughy, Miss Roma Gans and Mr. E. G. Osborne, all of Teachers College.

All the panels discussed the question "To what degree and in what ways should the elementary schools program and social life be consciously interrelated?" Each panel was composed of twelve delegates to the conference.

From the *Bronx* (N. Y.) *Home News*—

Educators Must Study Needs of Deaf Child, Speakers at Rehabilitation Conference Say

With 20,000,000 persons in this country deaf or partly deaf, of whom at least 3,000,000 are children, educators throughout the land must begin an extensive program of study to remedy this appalling condition, Dr. Hugh Grant Rowell, physician to the Horace Mann School for Boys, 246th Street and Broadway, New York City, and Dr. Rudolf Pintner, professor of education at Teachers College, Columbia University, declared at the National Conference on the Education and Rehabilitation of Handicapped Children, being held at New York University.

"Conservation of hearing programs can prevent many cases of impaired hearing," Dr. Rowell told the conference. "Through early discovery of existing cases, physicians can oftentimes actually cure the child's impairment.

"Where the hearing loss is manifest socially, the child is taught lip reading and the teacher instructed in handling him, thus improving his chances of promotion and salvaging him as a community asset of considerable value."

In the Horace Mann School, Dr. Rowell said, a very comprehensive hearing program has been carried on for several years, proving of "great value to teachers and parents."

"Failing pupils are often an entirely unnecessary cost to the taxpayer," he went on. "And if the failure is passed over and the child allowed promotion, the standards of education are lowered unreasonably. Few people realize that school health programs are, to a considerable extent, self-supporting because they are able to inaugurate measures which prevent many unnecessary repeaters."

Deficiency in hearing puts the individual at a disadvantage in relationship to his environment, Dr. Pintner asserted, as it demands a psychological readjustment of his whole life. Research into the personality and character qualities of the hard of hearing at all ages is necessary, if we are to help intelligently in such readjustment, he added.

"We need careful and thorough research into the personality and character of the hard of hearing child from the very beginning of his school career," Dr. Pintner said.

"As soon as we have discovered this deficiency in hearing we should immediately begin a study of the personality and character qualities of the child. We should make an inventory of his assets and liabilities in order to help us in guiding the child in the difficult task of readjustment."

From the *New York Times*—

Hobbies Foster Studies

By Charles C. Tillinghast

Headmaster, Horace Mann School for Boys

For the schoolmaster, one fact stands out today with startling clearness. Whether appreciating it or not, whether able to use it profitably or not, the boys and girls now in school will in adulthood have a vastly greater amount of unemployed time at their disposal than has hitherto been the portion of any except a few. With this the case, what shall be the attitude of the school? Can anything be done? Should anything be attempted?

One group of school men feels no obligation for setting up activities within the school to prepare boys and girls for this increased leisure. Another group, whose number is increasing, believes that education should concern itself with the whole child, and that as little break as possible should occur between the education that goes on within the walls of school and that which goes on outside. This group tries to knit together the activities of school, home and society in general so that every child may have experiences which will better fit him for the larger leisure.

Accepting the implication of this latter philosophy, the Horace Mann School for Boys has attempted to work out a plan by which every boy will be encouraged and in a measure almost compelled to follow at least one avocational interest which the school attempts to foster and direct. The plan is now in its first year. In a long school day, continuous from 9 until 5, there has been set up on four days of the week an activities period of an hour and a half.

Believing that one necessity for the satisfying use of leisure time is to have physical fitness and as far as possible some aptitude in physical sport, we have required each boy on at least two of these four days a week to participate in some game. Here the interest is partly in team play, which has a distinct social importance; but even greater emphasis is laid upon games that will contribute a permanent personal interest and skill. Some of these games are handball, ping pong, swimming, boxing, indoor and outdoor tennis.

On the other two days a boy is required to follow, quite apart from his academic work, some active interest which makes a strong appeal to him, in the hope that in this pursuit his imagina-

tion will be fired by the possibilities inherent in "hobby riding," with the likelihood that he may become deeply interested in some specific hobby.

Through assembly meetings, questionnaires and other devices the faculty sought to discover the boys' own wishes. These findings were checked in terms of the possibilities, in terms of the availability of members of the faculty for hobby supervision. The boys, on the whole, welcomed the suggested change from our previous routine of compulsory physical work every day in the week.

Not entirely to our surprise, but greatly to our satisfaction, we found that the members of the faculty were possessed of a genuine versatility, which made it possible for a large number of interesting groups to be formed, membership in any one of which was open to every boy who might want to find out more about that particular hobby.

One interest has centred around hobbies of a mechanical sort, such as the making of model airplanes and boats, the assembling of motors, the building of stage sets, and working in wood and metals. A second group has centred around the collecting urge, common to so many boys, whether of stamps, fish, autographs or fine books. In a third group has been conserved the game instinct, and through chess, checkers, bridge and similar table games many boys have increased their interest and skill.

A fourth group has had its attention turned toward investigation and discussion of current problems, especially engrossing at the present. Here are modern language clubs, science clubs, an economics club, an international club, a good government association, and a current events seminar.

A fifth group has concerned itself mainly with expressional work in music and dramatics. This has been designed for the boy who, while not an expert in these fields, and not good enough to "make" the Glee Club, the orchestra or the Dramatic Club of the school, is yet keenly interested in some phase of the activities represented. In a sixth division are boys interested in reading and study—and there are those even of this latter class—and in literary production in general.

Because of the fact that the experiment is yet new, and since judgment concerning it must be largely subjective, it is difficult accurately to evaluate its success. Certain facts stand out with fair clearness. There has been a decided increase in the interest of the faculty in the broader philosophy of education; there has been an even more comradely relationship established between boys and men; there has certainly been a discovering of unexpected values and capabilities in boys who have never before had a chance to show what they can do outside the classroom; and a new significance has been given to hobbies in general and to some few in particular.

One need not now apologize because he is keenly interested in the prevention of war, the collecting of rare books, the breeding of unusual fish, or the writing of poetry. Rather is the apology made by the boy who, in the midst of such conversations, is forced to admit to himself if not to others that he has no hobby about which to wax eloquent.

Coincidentally with this experiment there has been a noticeable increase in academic success throughout the entire school. That this is "post hoc ergo propter hoc" one cannot with fairness assert. We do feel justified, however, in assuming that there is a close correlation between the interest which has been engendered by the new program and the increase in classroom success.

That there have been difficulties and real problems must be obvious. We make no extravagant claims for what the plan has accomplished, but we know that we are on the right road.

From the *New York World-Telegram*—

Nursery Schools in Thirty-six States Improve Children in Health and Spirit

By Sally MacDougall

Miss Christine Heinig, instructor at the Child Development Institute of Teachers College, Columbia University, explained how thousands of children, too young to go to regular school, most of them from homes hit by the depression, have fallen into a fortune of fun and good food in Emergency Nursery schools in thirty-six states.

Miss Heinig, just returned from a trip as representative of the National Advisory Committee of Emergency Nursery schools, said that an average of fifty of these schools have been opened in thirty-six states.

The project was undertaken by the Federal Emergency Relief Administration and U. S. Office of Education to employ women teachers and relieve distress of mothers and children in homes suffering from economic difficulty.

The schools have set out to provide an environment free from emotional tension—a pleasant place for children to play, eat, rest and learn to wait on themselves. The stress of hard times results in emotional strain on families and often retards development of children, Miss Heinig explained.

The noon meal, the nap, occasional drinks of orange or tomato juice and an environment free from strain, result in a gain in weight in two or three weeks. And that, Miss Heinig pointed out, is one tangible way of evaluating the work.

"Our institute," she said, "is participating in this national program by offering training courses to the partially qualified C.W.S. workers who were preparing for jobs in Emergency Nursery schools.

"In our nursery schools we make it possible for the children to do the simplest things for themselves. If a mother is dressing a child and he says, 'No, I want to do it myself,' we think he is showing an admirable spirit in independence that ought to be encouraged. We believe in having hooks placed where a child can reach them, and buttons on his clothes large enough to be manipulated by small fingers.

"We also emphasize the importance of having home-made play equipment. We know that carpentry stuff made at home from things as simple as packing boxes usually affords far more fun than expensive toys."

Miss Heinig showed an express wagon, a play stove and shelves for toys and books she had made from packing cases. The wagon wheels had once been pie tins.

She hopes that the new flock of nursery schools will result in more patience and consideration being shown children at home. She does not believe in tearing them away from books or play too suddenly and hustling them off to bed, but argued that they should be given respectful warning as the time approaches to stop doing one thing and begin another.

"The idea is to teach a child to live on a schedule so that he may acquire habits of order and regularity and learn how to use time," she said. "Under all circumstances he should be made to feel that his personality is being respected."

Encouraging an infant to eat with relish is vastly more important than teaching him table manners, she pointed out. When a child is learning to drink from a cup or to eat with a spoon, she thinks it is a mistake to criticize him for spilling a little.

"We feel that if we give him the right kind of eating equipment, good manners will result," she said. "He should have a comfortable chair that will let his feet touch the floor and food

so placed that he won't have to reach across the table."

Although the Emergency Nursery schools are only a few weeks old, Miss Heinig said that parents already are asking that the project be made permanent.

From the *New York Times*—

Research Aided by CWA

A comprehensive study of the whole range of educational problems, from the teaching of nursery school children to adult and professional training, is being made by Teachers College, Columbia University, with the coöperation of the Civil Works Administration. More than seven hundred workers, supplied by the CWA, are engaged in the project, gathering data, compiling bibliographies and conducting laboratory experiments in the social sciences. The project was initiated by the United States Office of Education, which has approved the various studies, 218 in number.

The men and women employed as assistants are all college graduates. They were formerly jobless teachers, librarians, statisticians, journalists, laboratory workers and economists.

The surveys, according to Dr. Floyd B. O'Rear, who is in charge of the work, were selected with a view to improving materials and processes in teaching. They range from a study of household employment by Professor Benjamin Andrews to the compilation of charts for visual presentation of data in educational psychology, directed by Professor Goodwin Watson.

Many of the projects attack problems created by the new social and economic conditions. The relation of fascism to women's education, for example, is being investigated by Dr. Ruth E. McMurry. Research workers directed by Professor Mabel Carney are studying the attitude toward the Negro in various sections of the country. Dr. Fannie W. Dunn is compiling a bibliography on visual-audio education, examining not only the effects of the radio and motion pictures upon children of school age, but also methods of utilizing these inventions to best advantage in the schools.

Educational problems created by the national recovery acts are likewise being studied. The increase in leisure brought about by the NRA, enforced leisure among the unemployed and rapid changes in technology have made it necessary to formulate a program of workers' education. To this end, Dr. Ernest Johnson is examining the centres set up by the State Department of Education. With two assistants, he is observing the work done at these centres and interviewing teachers and students.

In addition, Dr. Johnson is examining the NRA educational centres and methods of workers' education in Europe. He intends to discover the function of teachers' training schools in educating workers, necessary relations between workers' education and labor movement and needs for professional training.

The growing interest among students in social and economic conditions is the subject of research by Dr. Paul R. Hanna. Three assistants are helping him in this investigation, and when it is completed he will prepare a monograph on his findings in an effort to bring to the attention of teachers the possibilities for enlisting their pupils in social work. Dr. Hanna believes that school children can, if properly directed, do much toward improving living conditions in their communities.

When the studies are completed reports will be issued by the professors in charge. No plans have been made as yet concerning the final disposition of these reports. If sufficient funds are secured a number of them may be published. Otherwise they will be tabulated and placed on file at Teachers College.

College & Alumni Notes

COLLEGE NOTES

Board of Trustees of Teachers College

We regret to announce the death, on Tuesday, April 24, 1934, of Mrs. Helen Hartley Jenkins, a member of the Board of Trustees since 1907.

Educational Administration

The annual spring picnic of the Administration Club will be held May 19 at the home of Professor and Mrs. George D. Strayer in Riverdale, N. Y. The afternoon will be spent in games and sports on the grounds of the Horace Mann Boys' School, after which a picnic supper will be served on the lawn of the Strayer home.

Professor Strayer addressed the District Four Conference of the New York State School Boards Association April 26 at Cobleskill. His subject was "The Financing of Educational Opportunity."

Professor N. L. Engelhardt was one of the principal speakers at the Mississippi Education Association meetings held April 20 in Jackson, Miss. He joined the Teachers College alumni of Mississippi at breakfast on that day and discussed with them the changes taking place in the college program.

Other recent addresses by Professor Engelhardt were before the Rotary Club and principals and supervisory staff of Providence, R. I., on April 24; the Naugatuck, Conn., Teachers League on April 26; and the meeting of the Parent-Teacher Association of Elmont, N. Y., on May 8.

Mr. Virgil M. Rogers, a student in Educational Administration in the Summer Session of 1933, has been elected superintendent of schools at Boulder, Colo. He was formerly superintendent at Gunnison, Colo.

During March and April the following students in Educational Administration were among those who completed their course requirements and passed the final oral examination for the Doctor's degree: Clare C. Baldwin, "The Organization and Administration of Substitute-Teaching Service in City School Systems"; Alonzo O. Briscoe, "Size of Local Unit for Administration and Supervision of Public Schools"; Frank M. Misner, "Extra Costs and Incidental Costs in the Erection of School Buildings"; Leon Westfall, "An Evaluation of Several Methods of Presenting Classroom Films"; Gordon McCloskey, "An Appraisal of Certain Phases of Economic Instruction in the Secondary Schools of New Jersey"; George D. Strayer, Jr., "Centralizing Tendencies in the Administration of Public Education."

Mr. Kenneth E. Oberholtzer has been elected superintendent of schools of Lubbock, Tex. He was formerly superin-

tendent at El Campo, Tex. Mr. Oberholtzer is the son of Superintendent E. E. Oberholtzer of Houston, Tex., who is president of the Department of Superintendence of the National Education Association.

A Survey Field Book for the Measurement of the Business Administration of a School System, a document of approximately one hundred and fifty mimeographed pages, has been prepared by Professor N. L. Engelhardt. *A Survey Field Book and Standards for the Operation and Maintenance of the Physical Plant in Colleges and Universities* has also been prepared in mimeographed form. The authors are Professor N. L. Engelhardt, C. E. Reeves, professor of education, Evansville College, Evansville, Ind., and Parl West, graduate student in Educational Administration, Teachers College. Both pamphlets are available in mimeographed form at the Bureau of Publications of Teachers College.

Professor Engelhardt addressed the Erie County School Boards Association at its spring meeting, held April 12 in Holland, N. Y. His topic was "Desirable Ways of Effecting Economies in Public School Systems."

At the Cleveland meeting, in February, the following resolution was adopted by the Department of Superintendence concerning the Joint Commission on the Emergency in Education, of which Professor John K. Norton is chairman:

We commend the splendid work of the Joint Commission on the Emergency in Education and we recommend:

a. That this committee be continued for the purpose of completing whatever projects it may now have under way and for meeting such additional emergency demands as may later arise.

b. That the scope of the work of this commission be broadened to include an appraisal of the present educational program, and to include long-term planning for such changes in programs as may be required to enable our schools to meet as effectively as possible the challenge presented to them by the changing social, industrial, and economic order.

c. That such additions to the personnel of the commission be made as may be deemed necessary to enable it to meet this larger responsibility as judiciously and intelligently as possible and that the name of the commission be so changed as to describe more adequately the enlarged scope of its work.

On March 11, Professor Norton participated in a round table discussion on Planning Educational Reconstruction, which was broadcast from Washington, D. C., over the National Broadcasting Company network. Participating with Dr. Norton in the discussion were Dr. George F. Zook, United States Commissioner of Education; Dr. Fred J. Kelly, chairman of the Committee on Social-Economic Goals of the National Education Association; and Dr. David E. Weglein, superintendent of schools, Baltimore, Md.

On March 28, 29, and 30, Professor Norton took part in the Twenty-first Annual Schoolmen's Week, conducted jointly by the College of Education of the University of Minnesota and the Minnesota State Department of Education, at the University of Minnesota, and gave three addresses on the following subjects: "Why the Schools Are in Trouble," "Looking toward Educational Reconstruction," and "A Charter of Educational Finance." Professor Norton will give several addresses between June 18 and June 21 at the sixth annual State Education Conference, to be held at the University of Alabama.

Professor Norton has been appointed chairman of a Committee on Education

and Government of the American Council on Education.

The third meeting of the Association of Public School Business Officials of Southeastern New York was held April 9 at the Faculty Club of Columbia University. The membership of this association comprises all those actively engaged in public school business administration in this part of the state. The purpose of the organization has been the study, analysis, and dissemination of the most efficient methods and practices pertaining to public school business administration. Those instrumental in forming the organization were: N. L. Engelhardt, professor of education, Teachers College, Columbia University; Donald W. Heights, assistant superintendent in charge of business, and Leslie S. Roberts, secretary, Board of Education, Mount Vernon, N. Y.; Peter J. O'Brien, secretary, and William Smith, assistant director of buildings and grounds, Board of Education, New Rochelle, N. Y.; Lyle C. Shaw, secretary, and F. C. Buros, executive assistant to the superintendent of schools, Board of Education, White Plains, N. Y.; J. H. Halpin, secretary, and A. G. Corbin, deputy superintendent of buildings and maintenance, Board of Education, Yonkers, N. Y.; George A. Marsh, business manager, Board of Education, Scarsdale, N. Y.; Clarence H. Wilson, clerk of the Board of Education, Port Chester, N. Y.; Mertin F. Bellows, secretary of the Board of Education, Tarrytown, N. Y.; and W. A. Clifford, executive secretary, New York State School Boards Association.

The meeting was an informal dinner meeting. The problem discussed was "The Advancement of Public School Financial Accounting." Invitations were extended to all workers in this field in the metropolitan suburban area.

During the past year especial emphasis has been placed upon the relationship of educational plant planning to all aspects of community planning. Our national government, through its various agencies, has stressed the importance of this relationship and the values to be secured from coöperative community planning. A conference on this subject will be held July 20, at which the points of view of city planning and school planning will be presented by those who have participated in this work in many sections of the country. The topics discussed will be: "The Relationship of Educational Plant Planning to Modern Community Planning," "Planning School Plants for Wider Use," "Zoning as It Affects the Location of School Plants," "The Major Street Plan as It Affects the Location of School Plants," "The Neighborhood Unit and the School Plant," and "Cooperation between School Officials and Planners."

The morning sessions of the Conference will begin at ten o'clock and afternoon sessions will be held from two to four o'clock. A luncheon-meeting will be held at the Columbia University Faculty Club for those who wish to discuss problems during the lunch period.

An exhibit of important developments and projects illustrating advanced planning will be on display during the period of the Conference.

The Conference is open to all those who are interested in either a special or a general sense in developing superior programs for community and educational planning. Requests for luncheon reservations should be sent to Professor N. L. Engelhardt, Teachers College, Columbia University.

The Conference of Educational Workers in Correctional and Penological Institutions will be held August 10 under the auspices of Governor Lehman's Commission for the Study of the Educational Problems of Penal Institutions for

Youth. This Commission consists of twenty prominent workers in education and in penology from the State of New York. The Conference has been developed for the purpose of pooling the ideas of experts in the penal field and experts in the educational field. It should have a very significant outcome because of the wide interest which is now being directed toward the solution of crime problems.

All persons having either a specific or a general interest in education and penology are invited to attend the Conference. Those who are now engaged in educational or administrative work in prisons or reformatories should find the Conference particularly valuable, and public school administrative workers and teachers may gain helpful insight into their own problems by attending the lectures and discussions.

The Conference will begin with a morning session at which pertinent educational problems in reformatories and prisons will be discussed by Dr. Walter N. Thayer, Jr., Commissioner of Correction for New York State; Mr. Austin H. MacCormick, Commissioner of Correction for New York City; and Mr. Walter M. Wallack, Director of Education, New York State Department of Correction.

A luncheon-meeting will be held at the Columbia University Faculty Club, at which the speakers will be Mr. Sam A. Lewisohn, Chairman of the Commission to Investigate Prison Administration and Construction in New York State; and Mr. Lewis E. Lawes, Warden of Sing Sing Prison. The chairman of this meeting will be Dr. J. W. Ellis, Commissioner of Department of Institutions and Agencies, State House, Trenton, N. J.

There will be five round tables in the afternoon for the discussion of special problems. The topics and speakers are as follows:

Round Table 1

Topic: "The Place of Mental Hygiene in the Prison and Reformatory School." Dr. Edgar A. Doll, Vineland, N. J., Chairman.

Speakers: Dr. F. Lovell Bixby, Department of Justice, Washington, D. C.; Mr. John Cranor, Superintendent, Huntington Reformatory, Huntington, Pa.; The Honorable Harold Donnell, Superintendent of Prisons, State of Maryland.

Round Table 2

Topic: "The Administration of Education in Prisons." Mr. Edward R. Cass, General Secretary, American Prison Association, New York City, Chairman.

Speakers: Dr. L. N. Yepsen, Director, Division of Classification and Education, Department of Institutions and Agencies, Trenton, N. J.; Mr. Sydney Souter, Superintendent, New Jersey Reformatory, Annandale, N. J.; Major Mark O. Kimberling, Superintendent, New Jersey Reformatory, Rahway, N. J.; Mr. D. D. Scarborough, Director of Education, Attica Prison, Attica, N. Y.

Round Table 3

Topic "Relationships of Penal Institutions to Community Social Agencies." Miss Jane Hoey, Assistant Director of Welfare Council, New York City, Chairman.

Round Table 4

Topic: "Relationship of Classification of Prisoners to Educational Programs in Prisons and Reformatories." Dr. V. C. Branham, Deputy Commissioner of Correction for New York State, Chairman.

Speakers: Mr. Frederick Moran, Executive Director, Board of Parole, New York State; Mr. Leon Faulkner, Director, Children's Village, Dobbs Ferry, N. Y.; Dr. Emily Burr, Director, Vocational Adjustment Bureau, New York City.

Round Table 5

Topic: "The Rôle of Health and Physical Education in Programs for Delinquents." Dr. Jesse F. Williams, Professor of

Education, Teachers College, Columbia University, Chairman.

The evening meeting will be presided over by Dr. William E. Grady, Associate Superintendent of Schools, New York City. The topics and speakers will be as follows:

Topic: "Ways and Means of Improving Educational Programs in Prisons and Reformatories."
Speaker: Mr. Calvin Derrick, Superintendent of State Home for Boys, Jamesburg, N. Y.

Topic: "The Relationship of the State's Program of Education to Education in the State Institutions."
Speaker: Dr. J. Cayce Morrison, Assistant Commissioner for Elementary Education, New York State Department of Education, Albany, N. Y.

Adult Education

The appointment of Lyman Bryson, Leader of the Public School Forums of Des Moines, Iowa, as visiting professor in Adult Education for one year, from July 1, 1934, has been announced. Professor Bryson will coöperate in the regular work of the major courses in Adult Education and will also offer courses in Methods of Adult Education.

Before going to Des Moines, Professor Bryson was director of the California Association for Adult Education. He has also been chairman of the San Diego Open Forum and professor of anthropology at San Diego State Teachers College. He was with the American Red Cross and the League of Red Cross Societies from 1917 to 1924, during which time he traveled extensively in Europe, Asia Minor, and the Far East. Professor Bryson is a frequent contributor to *The Atlantic Monthly, The New Republic, The Journal of Adult Education,* and other magazines.

On March 13 Professor Edmund deS. Brunner discussed "Adult Education and the New Leisure" before the New York Society for the Experimental Study of Education. On March 27 he addressed the Parent-Teacher Association at Hempstead, L. I., on "The Use of Current Issues in the School Curriculum."

Mrs. Elizabeth C. Morriss, in collaboration with Miss Caroline Whipple of the New York State Board of Education, has completed a revision of Gray's *Manual for Teachers of Adult Illiterates.* This manual will be used in the present emergency program of adult education.

On April 14, at the annual conference of The Eastern States Association of Professional Schools for Teachers, Professor Brunner opened the discussion of an address by United States Commissioner of Education George F. Zook on "What Can Teacher Training Institutions Do to Develop Leadership for Adult Education?"

Commercial Education

Dr. W. R. Odell was elected president of the National Association of Commercial Teacher Training Institutions at the meeting of the organization which was held February 24 in Cleveland.

Dr. Odell spoke to the commercial teachers who instruct the adult unemployed in New York City schools April 4 at the Central School of Business and Arts.

The group in Education 260M has just completed a report on the commercial curriculum for Englewood, N. J.

A new textbook, *Bookkeeping for Immediate Use,* by Kirk, Street, and Odell has recently been published by The John C. Winston Company.

Educational Psychology

Professor Arthur I. Gates addressed the Child Study Association of America on April 4 on "Progressive Practices in Teaching the Language Arts in the Elementary School."

Professor Leta S. Hollingworth addressed the National Conference on the Education and Rehabilitation of Handicapped Children, held under the joint sponsorship of the National Council on the Physically Handicapped, the National Committee for Mental Hygiene, and the School of Education of New York University, on March 9 at New York University.

Professor Rudolf Pintner spoke before the group of educators concerned with the hard of hearing child, in connection with the conference on handicapped children held March 10 at New York University.

Educational Sociology

On March 1 Professor Heber Harper addressed a meeting of the trustees of the University of Denver and also the annual trustees' meeting of the Foundation for the Advancement of the Social Sciences. During his week's stay in Denver, Professor Harper gave several other addresses, among them the following: "Youth and the Rebuilding of Russia," before the student assembly of the University of Denver; "Some Successes and Failures of Planning in Russia," at the fortnightly luncheon of the foundation for the Advancement of the Social Sciences; "The New Educational Experiments in Russia," at the University of Denver faculty luncheon. He also spoke at the annual alumni banquet and conducted two seminars.

During March Professor Harper spoke before several groups in Pittsburgh, Pa., among them the Federation of Women's Clubs, the Y. M. C. A. and civic leaders, the Ben Avon High School, and the University of Pittsburgh. On April 13 he gave one of a series of lectures being presented at the New School for Social Research, New York City, on "Russia Today," his subject being "Foreign Relations of the Soviet Union."

Beginning May 3 and continuing through the four succeeding Thursdays, Professor Harper will deliver a series of five lectures on "Contemporary European Problems" at the New School for Social Research. These lectures form a part of the New School's course on Immediate Problems in World Affairs.

Elementary Education

The second conference for Elementary School Workers was held at Teachers College, March 16 and 17. The general topic of the conference was "The Elementary School Program." The opening meeting was held in Horace Mann auditorium Friday evening, with Professor J. R. McGaughy serving as chairman. The first speaker, Professor Edmund deS. Brunner, talked on "Social Change, the Teacher, and the Child." The second address was made by Professor Lois Hayden Meek, whose subject was "Social Change, the Family, and Education." Twelve panel discussion groups were conducted Saturday morning. The discussions centered around the theme "To What Degree and in What Ways Should the Elementary Program and Social Life Be Consciously Interrelated?" The final meeting was held in Horace Mann auditorium immediately after the panel discussions. A general panel discussion by chairmen of the smaller groups was conducted for the purpose of presenting and organizing the salient points and questions raised by the smaller panels. The conference

was closed with a challenging address by Professor McGaughy on the subject "Elementary Education Looks Ahead." Members of the conference, upon motion, voted a request that another conference be held later in the spring.

Members of the major course participated in the school survey of Yonkers, N. Y., in April. Through panel discussions the students first studied those phases of the elementary school which were to be observed and evaluated when the survey was being made.

At the Thursday afternoon tea held March 21 Professor Maxie N. Woodring gave an interesting talk on her trip to Bali. Through photographic slides and an exhibit of native handicrafts, she told of the customs and characteristics of the inhabitants of this quaint island. Professor Goodwin Watson was the speaker at the tea held March 14. He emphasized the need for teachers to exercise a more active leadership in studying the economic, social, and educational problems confronting America to-day.

Fine Arts

At the meeting of the New Jersey Vocational and Art Association on March 24 Miss Lucia W. Dement read a paper on "The Arts as an Educational Necessity," followed by Professor Paul Hanna of Lincoln School, who spoke on "The Art Course for the New America."

Guidance and Personnel

Approximately five hundred placement and personnel workers met March 23 and 24 for a two-day conference on Employment and Guidance Procedure, under the auspices of the Welfare Council of New York City. Dr. Roy N. Anderson participated in a panel discussion on "Skills Necessary in Placement Work and How to Acquire Them."

Dr. Anderson has been asked to make an investigation of the administrative personnel of the New York State Temporary Emergency Relief Administration and of the CWA.

The New York State Employment Service, coöperating with the section on Employment and Vocational Guidance of the Welfare Council, has planned a two-weeks' emergency training course for placement workers, to be given April 11 to 24. Dr. Anderson has been asked to participate in this training program.

Arrangements have been made through the office of Charles M. Smith, director of vocational guidance and placement of the New York City Board of Education, whereby students in field work in Guidance and Personnel can work, on an apprentice basis, in the offices of the vocational and educational counselors of the New York City Schools. Each student will be routed among the various offices in such a way that he will obtain a comprehensive view of the guidance process and also some practice in performing the various functions, such as record keeping, interviewing, making case studies, vocational testing, measurement of achievement, etc. This arrangement is to go into effect in the Winter Session of 1934.

Dr. C. J. Ho (Ph.D. 1928) has accepted the position of director of research of the National Association of Vocational Education of China. His headquarters are at Shanghai.

Miss Olive H. Rowe (M.A. 1929) is principal of the Girls' High School, King William's Town, South Africa.

History of Education

Professor Edward H. Reisner has been made chairman of the Committee on Education of the City Fusion Party of New York.

Professor Reisner addressed a meeting of the Teachers College Alumni Association of Philadelphia April 10.

Horace Mann School

On March 13 Professor Rollo G. Reynolds addressed the Parents' Association at Englewood, N. J., and on March 23 he spoke before the New Jersey Vocational and Art Association at Asbury Park. He visited the schools of York, Pa., April 3-6 and made several addresses to the teachers. On April 9 he spoke before the Parents' Association of the Maplewood, N. J., Schools.

The Parents' Association of the Horace Mann Schools held its annual dinner at the American Women's Association Club House March 20. More than three hundred parents and teachers were present. Addresses were made by Professors Robert M. MacIver and Harry A. Overstreet and Dr. John Levy.

Mrs. Bush Brown, head of the School of Horticulture at Ambler, Pa., and a graduate of the Horace Mann School, spoke to the High School girls March 22 on "Horticulture as a Profession for Girls."

Dr. Ina C. Sartorius addressed the New York Alumnae Association of Kappa Kappa Gamma March 14 at the Panhellenic Club. Her subject was "Simplifying My Child's Life."

Dr. Gerald S. Craig took part in a panel discussion March 9 and 10 at the Progressive Education Association Meetings in Washington, D. C. The topics were "Constructing the Curriculum on the Basis of the Child's Interests and Experiences," and "The Reorganization of Secondary Science."

Dr. Cecile White Flemming has continued to serve this year on the Directing Committee for Experimental Work on Photoplay Appreciation for the National Council of Teachers of English. This committee began its work three years ago under the direction of Mr. William Lewin of the Newark Public Schools. Mr. Lewin's study on Photoplay Appreciation in the High Schools will soon be available in printed form.

Dr. Flemming has been asked to serve on the committee which is planning for the second Summer Conference of the thirty schools participating in the experimental program directed by the Progressive Education Association. Representatives from the administrative and teaching staffs of these schools will meet some time during June to consider progress made thus far and to confer on instruction programs and procedures for the second year of the eight-year experiment.

Household Arts

Professor Helen Judy-Bond attended the state educational meeting, held April 6 and 7 in Columbus, Ohio, and gave a talk on "The Profession of Homemaking in These Times" to the home economics teachers of the state, and one entitled "Junior Partners" to the student clubs of the state. She spent the week of April 9 at the State Teachers College in Mansfield, Pa., where she gave a series of five talks to the students of the home economics department. She also spoke to the entire student body on the subject "Education without End."

Mrs. Luz Maria Ramos, supervisor of home economics in Puerto Rico, and now

studying at the College, was a guest of Mrs. Franklin D. Roosevelt at the White House during the Easter holidays, and discussed with her some of the problems of home and family life in the Island which have been of especial interest to Mrs. Roosevelt since her recent visit to Puerto Rico.

Recent visitors of the Department include: Professor Margaret Edwards (M.A. 1920), dean of home economics, Greensboro College, Greensboro, N. C.; Dr. Saidee Stark (Ph. D. 1931), director of household arts, James Millikin University, Decatur, Ill.; Miss Beulah I. Coon (M.A. 1926), director of research, Federal Board of Vocational Education, Washington, D. C.; Miss Edna L. Skinner (M.A. 1928), dean of home economics, Massachusetts Agricultural College, Amherst, Mass.; Miss Edna P. Amidon, federal agent of Home Economics Educational Service, Washington, D. C.; Miss Frances Skinner (M.A. 1930), teacher of home economics, Pine Manor, Wellesley, Mass.; and Miss Alza Rogers, head of home economics, Cedar Crest College, Allentown, Pa.

Institute of School Experimentation

Professor Otis W. Caldwell and Mr. G. E. Lundeen have completed the manuscript for a book on superstitions, including results of experimental work in teaching to correct certain unfounded ideas. This book, under the title *Do You Believe It?* will be published by Doubleday, Doran & Company, Inc.

Professor Caldwell was the official representative of the American Association for the Advancement of Science at the Pennsylvania State Academy of Science, March 30 and 31. He addressed the Pennsylvania Junior Academy of Science on "Our Attitude toward New Knowledge."

Dr. A. W. Hurd was elected president of the National Association for Research in Science Teaching at the annual meeting in Cleveland in February. As chairman of the Committee on Criteria for the Organization of Instruction in Science, he presented the committee report at the recent meeting of the Association. A consensus of opinion of groups in science teaching indicated the primary importance of developing attitudes and thinking ability as guiding criteria. Dr. Hurd also read a paper on "Experimentation in the Teaching of Physics" at the meeting of the American Educational Research Association in Cleveland.

Dr. Victor H. Noll read a paper on "The Measurement of Scientific Thinking" at the Cleveland meeting of the National Association for Research in Science Teaching.

Dr. Noll will teach this summer at West Virginia University from June 18 to September 1.

Dr. J. W. Wrightstone has returned from Syracuse, N. Y., where he was engaged in securing extensive data on pupil attitudes, adjustment, and social performance for a monograph now in preparation. Dr. Wrightstone spoke before several teachers' groups while he was in Syracuse.

Dr. J. B. Maller read a paper before the American Psychological Association April 14 on "Delinquency Areas in New York City." He has recently published "Attention Test"—for the measurement of perseveration—(Institute of School Experimentation) and "Character and Personality Rating Scale" (Bureau of Publications, Teachers College, Columbia University).

Dr. Maller gave a talk before the New York Society for the Experimental

Study of Education on April 20. His subject was "The Revaluation of Educational Norms."

Library

Professor Eleanor M. Witmer was the visiting speaker at the library section of the New Jersey State Secondary School Conference, held May 4-5 in New Brunswick.

Miss Aubry Lee Hill, for five years executive assistant to the Librarian, has been appointed librarian of the New Rochelle (N. Y.) Public Library and will begin her work there on June 1.

The first issue of the Library's quarterly publication, *The Library Consultant,* is devoted to sources of book reviews. Copies of this will be forwarded on receipt of a cent-and-a-half self-addressed envelope.

Miss Ethel M. Feagley's address before the American Library Association has appeared in the March issue of the *Bulletin of the American Library Association.*

Revision of Professor Witmer and Miss Feagley's pamphlet *Beginners Guide to Bibliography* is under way. It will appear in an early fall issue of THE RECORD and reprints will be obtainable.

Professor Carter Alexander addressed the Rutgers University Chapter of Phi Delta Kappa April 19 on "Locating Data in Educational Research."

Two more guides produced in Education 221L, Bibliographic Research, under Professor Carter Alexander, are completed: A Guide to the Literature of Penal Education, by D. Ross Pugmire, and A Guide to the Literature of Speech Education, by Abraham Tauber. These guides have been submitted for publication, but no announcement of a date can be made now. Meanwhile, two typewritten copies of each are available for short-time loan on application to Professor Carter Alexander.

Lincoln School

Professor Jesse H. Newlon addressed a meeting of citizens at the University of Minnesota on March 29 on "The Problem of the Schools," in connection with Schoolmen's Week. This meeting, at which Governor McNutt of Indiana spoke on "State Education," was arranged by friends of education in behalf of the schools and colleges of Minnesota and of the nation as a whole.

Mr. Gordon R. Mirick spoke at the University of Toronto early in April on "Some Recent Trends in the Reorganization of Mathematics in the United States."

Professor Paul R. Hanna read a paper before the Fine Arts Section of the New Jersey Vocational and Arts Association March 24 during its convention held at Asbury Park, N. J. His paper was entitled "The Art Course for the New America."

Professor L. Thomas Hopkins participated in the meetings of the Department of Superintendence at Cleveland. He was a member of the panel which discussed "The Public School Curriculum for the New America," and of the panel on "Future Needs in Materials for Illiterates" at the meetings of the Department of Adult Education. At the meetings of the Progressive Education Association, which followed those of the Department of Superintendence, he was chairman of the panel which discussed "The Reorganization of the Secondary

School." A summary report of this discussion will be published at a later date.

At the Conference of Elementary School Workers, held March 16-17, Professor Hopkins was a member of Panel IX, appointed by Professor J. R. McGaughy to discuss "To What Degree and in What Ways Should the Elementary School Program and Social Life be Consciously Interrelated?"

On March 20, in Dover, Del., Professor Hopkins was chairman of a panel of adults composed of one member from each adult class in five Delaware counties. The topic discussed, "Trends in Modern Education," was part of a culminating program for adult classes. Preceding the discussion the members of the panel met for dinner, when points to be stressed and leaders of discussion were selected. This "dress rehearsal" was requested by members of the panel, only a few of whom had participated previously in such discussions.

Mathematics

Professor W. D. Reeve addressed the Mathematics Section at Schoolmen's Week at the University of Pennsylvania March 15 on "Correlation and Secondary Mathematics." He also spoke to the Mathematics Club of Temple University on "Teaching Mathematics as a Method of Thinking."

Music

On May 12 one thousand junior and senior high school boys and girls will gather at the McMillin Theatre, Columbia University, for the Annual Music Festival. Choruses, glee clubs, orchestras, bands, and ensembles will represent the accomplishments in many junior and senior high schools in the metropolitan area.

The In and About New York Supervisors Club met April 21 at International House. Professor P. W. Dykema presided and Dr. Howard Hanson, Dr. Hollis Dann, Mr. Arthur J. Ward, Miss Angela Diller, Miss Edna McEachern, Mr. George Wedge, and Dr. Victor Rebmann participated in a discussion of the whole problem of technical musical study with particular reference to the acquiring of skill in music notation.

The staff and some of the advanced students of the Department have been participating in the survey which is being made of the Yonkers, N. Y., schools.

Music Week was celebrated with the usual variety of activities in the halls of Teachers College and with special programs. A very interesting activity was the annual spring program of the a cappella choir May 7 under the direction of Mr. Robert Elwyn.

The a cappella choir of Guilford College, Guilford College, N. C., gave a program at Teachers College at Easter under the auspices of the Department of Religious Education. Mr. Max Noah (M.A. 1933) is director of the chorus.

Natural Sciences

Professor Gerald S. Craig addressed the teachers of the Long Beach, N. Y., Public Schools April 10 on "The New Place of Content in the Elementary Schools." He spoke before the classroom teachers of the Private School Teachers Association of Philadelphia April 24 at their meeting in Overbrook, Pa., on "Science in the Modern School."

Normal School Education

Professor W. C. Bagley spoke to the teachers of Wilmington, Del., April 20

on "Factors Other than Intelligence That Condition Learning."

Last year Dr. Stuart G. Noble, president of the National Society of College Teachers of Education, appointed Professor Thomas Alexander chairman of a committee on courses for the training of teachers. The work of this committee has been continued by the organization and is to eventuate in a yearbook on the education of teachers at the 1935 meeting of that organization.

Professor Florence B. Stratemeyer and twelve students of the Department went on an educational tour of teachers colleges and public school systems along the Atlantic Coast. They visited the teachers colleges at Harrisonburg, Farmville, and East Radford, Va.; Johnson City, Tenn.; Towson, Md.; the New College Community at Canton, N. C.; College of William and Mary, Williamsburg, Va.; Hampton Institute, Hampton, Va.; the rural schools of Wake County, N. C.; and the city schools of Raleigh, N. C.

Professor Stratemeyer attended the district meeting of the Progressive Education Association at Aliquippa, Pa., where she spoke at the luncheon-meeting, summarizing the high points of the meeting.

The Department of the Professional Education of Teachers and the International Institute entertained the student representatives of teachers colleges who attended the Spring Conference of The Eastern States Association, held at Teachers College.

Nursery School and Kindergarten–First Grade Education

Professor Patty Hill spoke at a memorial meeting for Miss Luella A. Palmer, held in St. Paul's Chapel, Columbia University, April 15. Miss Palmer was director of kindergartens in New York City for twelve years, and had the first experimental playroom and kindergarten under the direction of Professor Hill when the latter came to Teachers College in 1905.

Professor Hill addressed the Nursing Club of Teachers College April 19 on "The Relation of Nursing to the Nursery School."

Professor Hill and Professor Mary M. Reed attended the Association for Childhood Education meeting in Nashville, Tenn., May 2-5. Professor Hill was a guest of honor at the Association Dinner.

The Federal Emergency Nursery School Group who received the special training offered at Teachers College entertained at tea April 18 in the Patty Smith Hill Room. The tea was given in honor of Miss E. Mae Raymond, who served as chairman of the committee in charge of the training of this group.

Professor Reed spoke at the University of Pennsylvania March 15, during Schoolmen's Week. Her topic was "Vitalizing the Curriculum of the Primary Grades to Meet the Needs and Requirements of the New Social Order."

Professor Reed addressed a group of teachers in Westchester County April 14 on "The Purpose of the State Branch of the Association for Childhood Education," and a group in Hillside, N. J., April 17, on "Creative English for Children of the Kindergarten and First Grade."

Dr. Genevieve Coy gave a lecture March 3 at New York University on "Social Science in a Progressive School" to the teachers in the Progressive Education Group of the New York Public Schools.

Miss Charlotte Garrison spoke on the Parent-Teacher Association program of the kindergarten-primary department at the State Normal School, Jersey City, N. J., on "Play and Play Materials."

Miss Edith Conard addressed the Berkeley Institute Parents' Association, Brooklyn, N. Y., April 17, on "The Value and Use of Manuscript Writing." Berkeley Institute was one of the first schools to adopt manuscript writing and the first class which learned manuscript writing is now graduating from college. It is interesting to know that the legibility and beauty of their manuscript writing enabled these students to help defray their expenses in college.

At the April meeting of the Industrial Coöperative Service Bureau, Miss Conard gave a lecture on "Korean Customs and Crafts," illustrated with pictures.

Physical Education

At the Eastern District Convention of the American Physical Education Association, held at Atlantic City, N. J., April 4-7, various members of the Department staff appeared on the program. Professor Jesse F. Williams presided at the banquet April 5, and Miss Mary Josephine Shelly was the toastmistress. Miss Marjorie Hillas led the round table discussion of the Women's Athletic Section meeting on Mass Tennis and was also the discussion leader of the Official's Rating meeting. Dr. Norma Schwendener was discussion leader of the Athletic Games meeting of the Women's Athletic Section, and also presented a paper at the Research Section on "Game Preferences of 10,000 Fourth Grade Children." Professor C. L. Brownell spoke on "The Responsibility of the Physical Education Teacher in the School Health Program" at the Health Education Section meeting.

Several members of the department staff participated in the programs of the National Convention of the American Physical Education Association, held at Cleveland, Ohio, April 18-21. Professor W. L. Hughes presided at the meeting of the Physical Education for College Men Section; Miss Hillas presented reports on "Content" and "Official's Rating" at the Women's Athletic Section; Dr. F. W. Maroney spoke at the General Session on the topic, "Public School Physical Education Looks Ahead," and at the meeting of Phi Epsilon Kappa on "The Challenge of the New Day in Physical Education." Professor Brownell presided at the meeting of the Research Section, and Professor Williams presented to the Health Education Section a report of the Terminology Committee. He was also the toastmaster at the banquet, and on April 21 led the panel discussion of the Public School Section. At the banquet Professors Hughes and Brownell received honor awards for outstanding work in the furtherance of health and physical education.

On April 2 Professor Hughes was a member of the panel discussion on Problems in Athletics, held at Rutgers University, New Brunswick, N. J.

Dr. F. W. Maroney addressed a joint meeting of principals and teachers of physical education in Paterson, N. J., March 7; was guest speaker at the banquet of the North-West District Pennsylvania Teachers Association, East Stroudsburg, Pa., March 9; and gave an address entitled "Let's Go, Team!" at the fifth annual banquet of the Central Council Parent-Teacher Association, Phillipsburg, N. J., March 12.

On March 24 at the annual reunion of the Arnold College alumni, New Haven, Conn., Professor Brownell led a discussion based on the theme: "In order to be

effective, a program of physical education activities must be developed on sound educational principles."

Rural Education

Professor Edmund deS. Brunner attended a committee meeting on March 22 in Chicago to plan for the social organization and adult educational activities of the new communities having set up under the Division of Subsistence Homesteads of the United States Department of the Interior.

Secondary Education

In the list of Sixty Educational Books of 1933, prepared by the American Library Association and *Journal of the National Education Association* in the Enoch Pratt Free Library in Baltimore, Professor Thomas H. Briggs's *Secondary Education*, published last fall by the Macmillan Company, is one of the fifteen books starred as "especially useful."

At the Utah State Agricultural College, Logan, Utah, Professor E. K. Fretwell will teach two courses the last two weeks in June, High School Administration and the Organization and Administration of Extracurricular Activities.

Professor P. M. Symonds attended the meeting of the New York branch of the American Psychological Association and read a paper on "An Analysis of Thinking." The substance of this paper was the outcome of conferences with members of Education 335-336R in a series of evening meetings held during 1932-33.

In the course in Guidance for Leisure, conducted by the New York Society for the Experimental Study of Education, Professor Fretwell was the speaker on March 27. He spoke on the place of camping, gardening, sports, and travel in a leisure time program.

Mr. Galen Jones, instructor in Secondary Education for the current year, has been appointed principal of the Plainfield High School, Plainfield, N. J. He will assume active charge at Plainfield July 1. Mr. Jones has been assistant superintendent in charge of secondary schools at Tulsa, Okla., for the past five years.

On April 14 the members of Professor Briggs's class in The Foundations of Secondary Education held a luncheon in one of the private dining rooms of the Men's Faculty Club. The committee in charge, Mrs. Edith F. Staver and Messrs. Edward H. Vines and James H. Moyer, arranged an attractive program of music. Professor and Mrs. Briggs were the guests of honor.

At the invitation of Dr. J. D. Dillingham, principal of Newtown High School, New York, Professor Fretwell spoke at the meeting of the Newtown Parent-Teacher Association March 26 on "What the High School Can Do for the Worthy Use of Leisure."

The program committee of the Secondary Education Club has seen to it that the Thursday Afternoon Informals have been hours of profit as well as of relaxation. On March 15 Professor Harriet Hayes discussed student problems and welfare work at Teachers College and the manner in which her office meets many student needs. The following Thursday a string quartette from the Juilliard School of Music furnished an enjoyable half hour of music. On April 5 Professor Heber Harper, who has just returned from six months in Russia, gave an interesting talk on "The Youth Movement in Russia." The Club had the rare treat on April 12 of having as their guest speaker Dr. John Erskine, president of the Juilliard School of

Music. The committee expects to follow up these programs with other interesting activities, culminating in the annual spring picnic to be held at Professor Fretwell's farm in Connecticut about the middle of May.

Professor Fretwell has been appointed a member of the National Education Association Committee on Fair Play, of which Mr. W. W. Pangburn is chairman.

Miss Ruby M. Jolliffe, superintendent of camping in the Palisades Interstate Park, held her annual Camp Conference at Bear Mountain Inn on May 4-6. Professor Fretwell and Dr. G. Clyde Fisher were the speakers at the opening meeting.

The "boys" of the Speyer Junior High School of 1916-18 held on April 14 their annual alumni dinner at the Town Hall, New York City.

Professor Fretwell was the speaker at the Honor Society's installation of new members held April 19 at the George Washington High School. Miss Florence C. Myers is adviser of the Honor Society in this school.

Statistics

The collection of models illustrating statistical concepts owned by the Statistical Laboratory has recently been increased by a device made by Mr. Caswell Miles to illustrate one aspect of correlation. Sliding counters representing a two-way frequency distribution may by one motion be made to travel in a direction parallel to the horizontal axis, and by a different motion be made to travel in a direction parallel to the regression line. In the first case they pile up in a frequency distribution which has as its standard deviation the standard deviation of the original scores, and in the second case they pile up in a frequency distribution which has as its standard deviation the standard error of estimate. The obvious decrease in variation in the latter case is an indication of the size of the correlation coefficient and of its predictive efficacy. The model is in the form of two frames made to hang on the wall.

A number of other interesting models made by former students illustrate other statistical concepts, such as various correlation surfaces and the sampling variation of means. Among the more intricate of these is a model made by Miss Dorothy Rowell, showing vertical and horizontal sections of a normal correlation surface, and a model made by Dr. and Mrs. Walter Durost, showing partial and total correlations of the related regression lines and surfaces. The visitor to the Statistical Laboratory will also enjoy the beautiful illuminated parchment wall motto made by Miss Harriet Shoen.

Mathematics Essential for Elementary Statistics, by Professor Helen M. Walker, was published by Henry Holt & Company, Inc., in April. This is a self-teaching manual intended for the person who finds the study of elementary statistics unnecessarily difficult because of inadequacies in his preparation, and is the outcome of the analysis of diagnostic tests used in Teachers College over a period of several years.

Student Personnel Administration

On May 8 Professor Sarah M. Sturtevant addressed the Mothers' and Daughters' Banquet at the Nyack High School, Nyack, N. Y.

Social Change in Relation to Curricula Development in Collegiate Education for

Women, the dissertation of Grace R. Foster (Ph.D. 1934), has recently been published by the Galahad Press, Fairfield, Me. Dr. Foster is a teacher of psychology at Colby College, Waterville, Me.

On March 21 Professor Ruth Strang gave one of the series of guidance talks for District Superintendent Margaret T. Rae, and afterward led a discussion for the guidance committees of the schools of this district. On April 17, Professor Strang gave one of the lectures in the Child Guidance course for District Superintendent Benjamin Greenberg, and on March 24 she gave a radio talk under the auspices of the magazine *School.*

Dr. Max McConn, dean of Lehigh University, will be a member of the staff of the Department during the coming Summer Session. He will assist with a problem class for experienced deans of men and women.

The Division of Individual Development and Guidance will conduct a three-day conference on guidance July 31-August 2 in connection with the Summer Session. Preparations include plans for general meetings, conferences on the various aspects of guidance work, exhibits, and demonstration of procedures in Horace Mann School, in the Guidance Laboratory, and in classes dealing with remedial work.

Miss Lee F. Bacon (Teachers College 1933), former director of the Student Union Building at the University of Wisconsin, began her duties February 1934 as dean of women at Marshall College, Huntington, W. Va.

The recent activities of the Student Personnel Administration Club have included several very interesting events. Dr. David Eugene Smith entertained the members of the Club and their friends in his home on March 21. He spoke informally on Omar Khayyam and read from his own metrical translation of the Rubaiyat. The members of the Club enjoyed also the very fine exhibit of rare books and manuscripts which he prepared for them.

On May 12 the Club members will visit Princeton University and will be entertained by Mrs. Craig Wright of Princeton, N. J., sister of Miss Emily K. Post (T. C. 1933-34), at a buffet supper.

Bureau of Educational Service*

The following changes in positions of Teachers College Alumni are reported by the Bureau of Educational Service:

Anderson, Rowena (M.A. June 1925), from head of home economics department, Kamehameha Girls' School, Honolulu, T. H., to head of home economics department, Flandreau Indian School, Flandreau, S. D.

Baker, Frances (M.A. June 1933), from nursery school-kindergarten teacher, Children's School of Westchester, New Rochelle, N. Y., to nursery school assistant, Public Schools, Bronxville, N. Y.

Blackburn, Casper K. (M.A. 1933), appointed commandant, Illinois Military School, Abingdon, Ill.

Borst, Lillian (M.A. 1933), from teacher of homemaking, Public Schools, Poughkeepsie, N. Y., to assistant manager of tea room, Bryn Mawr College, Bryn Mawr, Pa.

Brinton, Helen (B.S. 1934), from teacher of first grade, Public Schools, Sayville, N. Y., to teacher of first grade, Public Schools, Patchogue, N. Y.

Burr, Marjorie (M.A. 1932), from teacher of nutrition, Grammar School, Manchester, Conn., to assistant dietitian, Waterbury Hospital, Waterbury, Conn.

* Any student who is taking or has taken twelve points of work at Teachers College or any graduate of Teachers College may register with the Bureau of Educational Service. No fee is charged. For full information write to the Bureau for copies of its booklets *Seven Factors in Getting a Position* and *The Right Person for the Right Position.*

Campbell, Helen Elmira (M.A. 1932), from teacher of French, Junior High School, Shaker Heights, Cleveland, Ohio, to teacher of French and Latin, High School, Parma, Ohio.

Chambers, Maude L., from professor of art, Southeastern State Teachers College, Durant, Okla., to critic teacher of art, State Normal School, Oneonta, N. Y.

Crona, Gerald M., from teacher of English, Central Commercial School, New York City, to teacher of intermediate grades, Kingsley School, Essex Falls, N. J.

Crookshank, Charles C. (M.A. 1933), from instructor in shop work, High School, Des Plaines, Ill., to instructor in manual arts, School for Deaf, West Trenton, N. J.

Dean, Jane Wagner (M.A. 1932), from home service director, Consolidated Gas Company, New York City, to home service director, Electrolux Refrigerator Sales, Inc., New York City.

Drennan, George, appointed instructor in shop work, Elmira Reformatory, Elmira, N. Y.

Ettelson, Samuel W., from instructor in science, Hunter College, New York City, to teacher of biology, Bulkeley School, New London, Conn.

Evans, Mabel A. (M.A. 1933), from county supervisor, elementary schools, Northampton County, N. C., to principal, elementary school, Sanford, N. C.

Fotheringham, Margaret M. (B.S. 1932), from dietitian, New York Hospital, New York City, to dietitian, Margaret Pillsbury Hospital, Concord, N. H.

Gebert, Clara, from demonstration and critic teacher, State Teachers College, West Chester, Pa., to English instructor, New Britain Teachers College, New Britain, Conn.

Gordon, Ethel L., from director of Hanna Nursery School, Cleveland, Ohio, to nursery school teacher, Vassar College, Poughkeepsie, N. Y.

Griffin, Eileen R. (B.S. 1933), from teacher in elementary grades, Public Schools, New Britain, Conn., to special class teacher, Public Schools, Westfield, Mass.

Hull, Annie L., from teacher of intermediate grades, Public Schools, Tulsa, Okla., to teacher of sixth grade, Public Schools, Mount Kisco, N. Y.

Kilmer, Elmer K. (M.A. 1926), appointed head of department of education, Seton Hall College, South Orange, N. J.

Kurzband, T. Karl (M.A. 1932), appointed assistant in art, Lincoln School, Teachers College, Columbia University, New York City.

LaFond, Laura (M.A. 1933), from teacher of French, Home School, Scarsdale, N. Y., to teacher of French, High School, Westport, Conn.

Laue, Edith A., from teacher of fifth grade, Public Schools, South Orange, N. J., to critic teacher of seventh grade, State Normal School, Oneonta, N. Y.

Littlefield, Fannie Lou (B.S. 1933), from teacher of dramatics and history, High School, Calhoun, Ga., to teacher of English, High School, Sayville, N. Y.

Marvin, William F., appointed tutor in personality and educational adjustments, Ethical Culture School, Fieldston, N. Y.

McCaw, Earl, from teacher of science and shop work, State Agricultural and Industrial School, Industry, N. Y., to special teacher, Public Schools, Port Chester, N. Y.

Muller, Theresa G. (M.A. 1933), from assistant in psychiatric education, Teachers College, Columbia University, New York City, to student assistant in health education, New College, Columbia University, New York City.

O'Neill, Catharine R., from instructor in French, High School, Northport, L. I., to instructor in history and French, Wilmington High School, Wilmington, Del.

Ong, Helen A. (M.A. 1933), from instructor in Spanish, Public Schools, Manassa, Colo., to instructor in Latin and English, High School, Bethesda, Ohio.

Orndorff, Nora L., from teacher of second grade, Public Schools, East Orange, N. J., to teacher of first grade, Public Schools, Washington, D. C.

Pammenter, Meryl V. (M.A. 1933), appointed teacher of English, Fowler High School, Fowler, Kan.

Parks, Ermine J. (M.A. 1933), appointed general secretary, Y. W. C. A., Elkhart, Ind.

Parmelee, Gertrude, from teacher of French and Latin, Notre Dame High School, Cleveland, Ohio, to teacher of French and Latin, High School, Brocton, N. Y.

ALUMNI NOTES

Teachers College Alumni Association Officers

President: Dr. J. CAYCE MORRISON, Assistant Commissioner for Elementary Education, New York State Department of Education, Albany, N. Y.

First Vice-President: Mr. FRED H. BAIR, Superintendent of Schools, Shaker Heights, Ohio.

Second Vice-President: Miss MATTIE B. FRY, Supervisor of Instruction, Public Schools, Anderson, Ind.

Treasurer-Secretary: Mr. CLYDE R. MILLER, Director, Bureau of Educational Service, Teachers College.

Member of the Board of Directors: Mr. FREDERICK ARCHER, Superintendent of Schools, Louisville, Ky.

Alumni Trustees:

Dr. J. CAYCE MORRISON, Assistant Commissioner for Elementary Education, New York State Department of Education, Albany, N. Y.

Dr. MARGARET V. KIELY, Principal, State Normal School, Bridgeport, Conn.

Alumni Office: Teachers College, 525 West 120th Street, New York City.

Address all communications to CLYDE R. MILLER,
Treasurer-Secretary of Alumni Association, Teachers College, New York City.

Joe Jennings (M.A. 1921) is supervisor of Indian Education, South Dakota.

Roswell C. Puckett (M.A. 1923) is principal of Bloom Township High School, Chicago Heights, Ill.

Cliff W. Stone (Ph.D. 1908) is directing a survey of the schools of Spokane County, Washington. Dr. Stone has planned and directed the Teachers' Institute for Spokane County as a time of sharing and interpreting results of the survey. Remedial measures are stressed.

Bailey L. Tucker (M.A. 1932) is teaching bookkeeping at John Marshall High School, Richmond, Va.

Louisa H. Lawton (M.A. 1929), formerly of the Ballard Memorial School, has been acting as educational adviser to the Liberty Consolidated School at Skylight, Ky. Miss Lawton is also a lecturer at the University of Louisville.

Emanuel Gamoran (Ph.D. 1924), who is educational director of the Commission on Jewish Education, has just completed the second volume in a series of new Hebrew textbooks, written in collaboration with Mr. A. H. Friedland. The book is entitled *The Play-Way to Hebrew*, and it will soon appear over the imprimatur of the Union of American Hebrew Congregations, Cincinnati.

Ada Beazley (1902) is manager of the Reed Farm, Martine Farm, and Nichols Cottage for convalescent cardiac children, Valley Cottage, N. Y., and White Plains, N. Y.

J. W. Norman (Ph.D. 1920), dean of the College of Education, University of Florida, Gainesville, Fla., recently participated in the dedication of the P. K. Yonge Laboratory School of the College of Education of the University.

A. R. Mead (Ph.D. 1917) is director of the new P. K. Yonge Laboratory School of the College of Education, University of Florida, Gainesville, Fla.